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Municipal Garage, Showing also a Number of City Automobiles

MUNICIPAL GARAGE AND AUTOMOBILE SERVICE

St. Louis Keeps Fifteen Machines in the City Garage at the Street Department Stables—Controlling Use of Automobiles to Prevent "Joy Riding"—Economies Effected by their Use in the Several Departments

By CHAS. CLAUDE CASEY

MOTOR conveyances are becoming popular for municipal work in St. Louis. In the last two years more than a dozen automobiles have been added to the city service, and a garage has been equipped with all modern conveniences for the care and housing of the machines.

The street department is using seven machines, two of them big seven-passenger American Mors, and five one-seat Buicks. The water department is using two large machines, the president of the Board of Public Improvements uses one, the building commissioner one, public service commission one, fire chief one and the police department two. In addition, the fire department is using a motor fire engine, the hospital department is using three auto ambulances and the police department has three motor patrol wagons. The police department also uses about a dozen motorcycles in its speed squad.

All of the machines, except those in the police and fire departments, are housed and cared for at the city garage. The

garage is in the yards of the street department stables on Forest Park boulevard at Vandeventer avenue. It is modern in every respect, houses the 15 machines without crowding, and provides for emergency repairs, cleaning, etc.

During the last few months Street Commissioner James C. Travilla, who has control of the garage, has worked out a system of reports which seems to have suppressed the "joy riding" tendency of some city officials and chauffeurs. A daily report is made in triplicate and signed by the man in charge, covering every machine, showing the exact times of the departure and return, miles traveled (as shown by register), number of gallons of gasoline and oil used, etc. Copies of the report go daily to the commission, the city comptroller and the president of the Board of Public Improvements. If a machine does not reach the garage as soon after it is released by an official as it should, or if it goes out when the official has not ordered it out, the record shows it, and if it goes out of its way to or from its destination the mile gauge tells the story.

MUNICIPAL GARAGE.

Daily Report of Automobiles at Municipal Garage, for the Twenty-four Hours from

6 A. M. 19....

to 6 A. M. 19....

Auto Number	Official in Charge of and Department assigned to.	Time of departure.	Time of return.	Number of gallons of gasoline supplied.	Number of Miles registered.
		M	M		
		M	M		
		M	M		
		M	M		
		M	M		
		M	M		
		M	M		
		M	M		
		M	M		

To be Forwarded Daily to
E. J. TAUSIG, Comptroller

In Charge of Garage

FORM FOR DAILY AUTOMOBILE REPORT

All machines in the city service now bear the name of the department in plain letters, so that citizens may also see if the machines are used for carrying others than officials. Some months ago a machine which had been assigned to the department of the supervisor of city lighting, carrying two women, was damaged in an accident after midnight in a public park and the department head seriously injured. Soon after the accident the official tendered his resignation. The new department head stated he did not need a machine and it was transferred to the president of the Board of Public Improvements. Another machine from the water department ran over a boy while in charge of a chauffeur and while out of the garage without authority. These two accidents brought about the lettering of the machines and strict regulations at the garage to prevent joy riding.

The assistant street commissioner uses one machine in general inspection work, and carries a plain clothes police officer, instructed to make arrests for littering, obstructing or damaging streets, or other violations of laws likely to come to his attention. Wagons hauling dirt, ashes, etc., which have cracks or are so overloaded as to permit scattering of the material along the street are particularly watched. The occupants of this machine also keep a close watch on sprinkling contractors to see that they carry out their contracts. Fines last year aggregated about \$30,000, deducted from sprinkling contract bills, for failure to sprinkle as frequently as required.

The superintendent in charge of garbage collection, two sprinkling inspectors, the engineer of construction and the superintendent of street cleaning, all under the street commissioner, have one-seat Buick runabouts. It was found that these

machines would save enough in salaries of men whose services could be dispensed with to more than pay for all of the machines the first year. This argument proved so strong that objections which had been made by the city comptroller were withdrawn and the machines were purchased a year ago.

The health department last year saved the salaries of three ambulance drivers and the expense of feeding from four to six horses by the purchase of one motor ambulance, and liked the better service and the saving so well that two additional ones have recently been added. It is the intention of the hospital commissioner to replace all of the eighteen horse-drawn ambulances with motor-driven ones, probably six or eight machines being required. The police department has had the same experience with patrol wagons, the number of machines required being so much less that one or more sets of men, three shifts, were saved for each motor wagon added. The up-keep of the machines has also been found less than the expense of feeding and caring for horses.

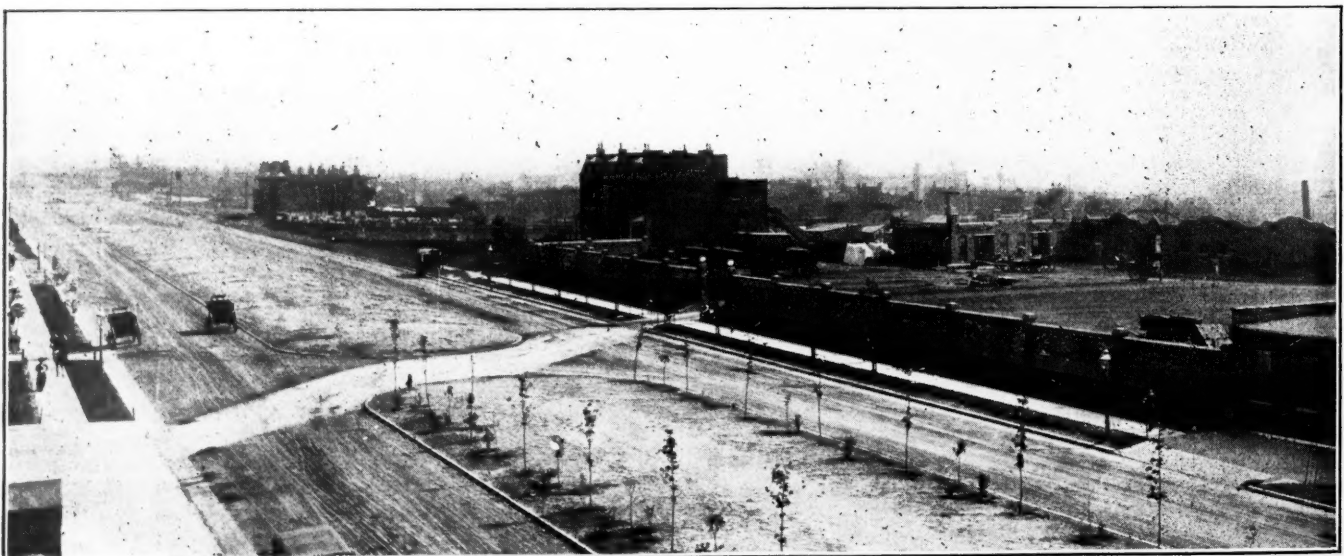
The motor ambulances are kept at the city garage, which is located at about the center of the city, and answer all the long runs. The police department houses its own machines, as does also the fire department.

Construction work on the municipal bridge across the Mississippi river, big additions to the city sanitarium, city infirmary and city hospital and other scattered public work have kept the machine of the Board of Public Improvements pretty busy. The Public Service Commission's Ford runabout has been used mostly by the engineers in gathering data in connection with the Union Electric Light & Power Company rate investigation and the service report on the street railways.

Inspection work requiring the presence of the building commissioner, where the individual inspectors could not serve the purpose, was the reason given for the purchase of the building department machine.

Many other machines have been asked for from time to time, but have been refused so far. The hospital commissioner, the assistant health commissioner, the fumigating corps and others are among those who claim they could save the cost of machines in time and salaries.

Besides the regular work of the city machines, each one belonging to a certain department, all are occasionally used for special inspection work. The Municipal Assembly formerly had large livery bills to pay every year for taking committees to inspect streets in connection with street vacation, grade crossing and other legislative problems, but during the past year all of these trips have been made in city machines. Last summer, when a campaign was being made for the outer park reservation district, several city machines carried parties of city officials, newspaper men and others on a number of whole-day tours



STREET DEPARTMENT STABLES AND MUNICIPAL GARAGE. ALSO FOREST PARK BOULEVARD, NEWLY PARKED

around the hundred-mile circle to the west of the city. City officials also have frequently had occasion to entertain visiting officials who wished to see parks or street improvement work, and city machines have frequently been used for that.

Since the purchase of the water department machines, Columbia Bottom road, north of the city to the Chain of Rocks water works plant, has been improved by the city until it now rivals some of the city boulevards as a pleasure drive. The drive is about three miles long, extending from the end of Broadway, eight miles north of the Court House, to Chain of Rocks park.

SAMPLING FUEL GAS

IN making a complete test of steam plants connected with pumping stations, lighting stations and other power plants, or the coal used in such plants, one of the important steps is the sampling of the flue gas. A method of collecting such samples which is simple and at the same time is believed to furnish fair average samples even for large flues is described in a bulletin of the Bureau of Mines, in which Messrs. D. T. Randall and Henry Kreisinger described experiments conducted by them in the use of North Dakota lignite as a fuel for power plant boilers.

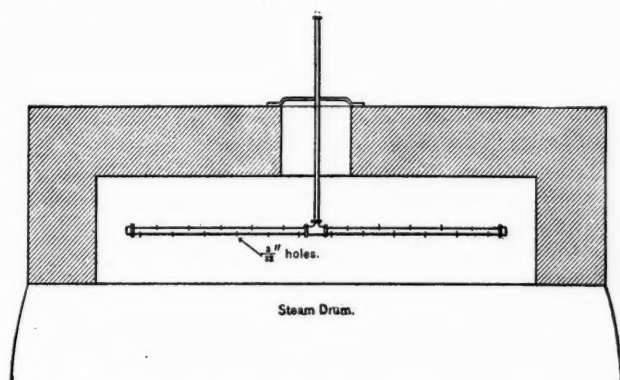


FIG. 1.—SECTION THROUGH UPTAKE SHOWING LOCATION OF FLUE GAS SAMPLER

The general features of this simple contrivance and its location are shown by the accompanying illustration, the device being placed in the uptake about 18 inches below the damper. The gas sampler is a standard $\frac{3}{4}$ -inch iron pipe closed at both ends with caps and having two rows of small ($\frac{3}{32}$ inch) holes four inches apart drilled in a staggered way on two sides of the pipe. This $\frac{3}{4}$ -inch pipe is connected at the middle to a $\frac{1}{4}$ -inch pipe, which extends out of the setting and leads down to within three feet of the floor, where it is connected to a steam ejector, as shown in Fig. 2. The sample of gas for chemical analysis is taken through the petcock shown. The object of the steam ejector is to induce a continual stream of gas to flow

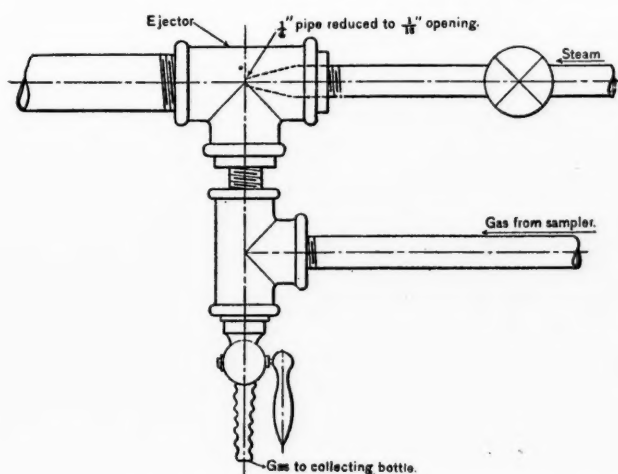


FIG. 2.—STEAM EJECTOR AT END OF PIPE FROM GAS SAMPLER

from the uptake through the sampling apparatus. The construction of the $\frac{3}{4}$ -inch pipe placed in the uptake permits of drawing the gas from a large area, so that the sample drawn represents fairly well the average composition of all the gases passing through the uptake.

During a test regular samples were taken through the sampling device during a period of about 30 minutes, the analyses of the samples determining the average chemical composition of the gases during that time.

THE MAYOR'S CABINET

BY DARIUS A. BROWN, MAYOR OF KANSAS CITY

THE inauguration in Kansas City, Mo., of what has come to be known as the "Mayor's cabinet" was prompted by a desire to accomplish several purposes. In the first place, where there are several branches or departments of the city government there has always been a tendency for each department to consider itself an independent body, and there has been lack of co-operation by the various departments, and it was thought that in order to have the greatest efficiency there must be, as nearly as possible, perfect co-operation by these departments.

In the next place, it is not only essential that the heads of departments should be thoroughly familiar with the service sought to be rendered by that department, but it is also essential that the chief executive should be as familiar with the activities and details of each of the various branches as possible.

It was to realize these objects that on the third Monday after my entering upon the duties of the office of Mayor, I requested the Chief of Police, the City Engineer, one member of the Board of Police Commissioners, the President of the Public Utilities Commission, the City Auditor, the City Comptroller, the Speaker of the Lower House of the Common Council, a member of the Upper House of the Common Council, the President of the Board of Fire and Water Commissioners, the President of the Board of Public Welfare, the President of the Board of Park Commissioners, a member of the Hospital and Health Board, the Municipal Librarian, the President of the Board of Civil Service, the City Counselor and the City Treasurer to meet at the Mayor's office at ten o'clock a. m. At that time I stated to those present that it was my desire to hold these meetings each Monday morning at ten o'clock sharp, and that I desired each member of the conference during the week to make notation of such suggestions as might occur to him in regard not only to the transaction of the business of his particular department but as to the transaction of the business of every other department of the city government. At each of these meetings each member of the conference is called upon to offer for discussion such suggestions as may occur to him. The matters are then thoroughly discussed by all present and the consensus of opinion arrived at as to the best policy to pursue, and then the matter is referred to the particular department having jurisdiction over it, accompanied by the recommendation of the conference.

Many valuable improvements in the municipal service have been secured as the result of suggestions and discussions; many irregularities and abuses have been detected and remedied; there has come to be complete harmony and co-operation between the various branches of the city government, and the executive officer of the city has received invaluable assistance and has become thoroughly familiar with the activities of each branch of the municipal service. Matters of legislation, of municipal service, of public improvements, and of every kind and character connected with the municipal government have been referred to the special committees, who have furnished exhaustive reports as to the law and the facts, on which reports action has been taken.

After about nine months of these conferences it occurred to me that valuable suggestions might be received from men who were entirely disconnected with the city government. In other words, that suggestions, complaints and criticisms should be received from citizens engaged in the civic and industrial life of

the city. For that reason I requested the following civic and industrial bodies of the city to select one of their number as an accredited representative at these weekly meetings: The Commercial Club, City Club, Kansas City Fruit and Produce Exchange, Board of Trade, Industrial Council, Jackson County Medical Society, Kansas City Homeopathic Society, Team Owners' Association, Real Estate Exchange, Master Builders' Exchange, Kansas City Implement, Vehicle and Hardware Club and the Kansas City Press Club. These civic and industrial organizations have very gladly and kindly responded to the request and have selected one of their members to appear at these meetings, offer suggestions and participate in the discussions. In this way not only has the Mayor been able to take advantage of the advice and counsel of the heads of departments and the business men of the city, but the head of each department has had the benefit of the counsel and advice of all of these men.

These conferences have proven of incalculable benefit to every branch of the city service.

WATER RATES IN MANY CITIES

An Analysis of Flat and Meter Rates in Two Hundred and Forty-nine Cities—Very Wide Range of Rates

The water rates charged by companies and municipal plants in a large percentage of the cities of the country have been collected and tabulated by Mr. Frank C. Jordan, Secretary of the Indianapolis Water Company, who has recently presented in a paper a table of such rates revised to November, 1910. These show the rates in more or less detail, but it might be instructive to select two classes of rates, the maximum meter rate (since it is the maximum rate which is ordinarily paid by the majority of consumers) and the rates for a house of six rooms. Taking first the meter rates, we find these ranging from a minimum of 4 cents to a maximum of 60 cents. An inspection of the accompanying table shows the rates pretty well scattered over this extremely wide range, although the lowest rate given by more than ten companies or cities is that of 10 cents per thousand gallons, which rate was reported by seventeen cities. A 15-cent rate was reported by fourteen cities, a 16-cent rate by eleven cities, a 20-cent rate by twenty-nine cities, a 25-cent rate by thirty-six cities, a 30-cent rate by thirty-one cities. A rate lower than 10 cents was reported by twenty cities, between 10 and 15 cents by nineteen cities, between 15 and 20 cents by twenty-nine cities, between 20 and 25 cents by ten cities, between 25 and 30 cents by eleven cities, between 30 and 35 cents by thirteen cities, between 35 and 40 cents by eleven cities, between 40 and 50 cents by eight cities and 60 cents by one city. It is seen that the rates between 15 and 25 cents, both inclusive, seem to represent those most commonly used, 118 cities being found between these limits, or almost one-half of the entire number.

The table of flat rates was compiled using as a unit a six-room house having hot and cold water at the kitchen sink only. Few rate cards agree entirely on any unit of this kind, but an effort was made to reduce all to this common basis as nearly as could be judged from the rates in the several cities. Twenty-seven of the cities in the list sold water by meter only, and twenty-four others did not furnish sufficient data to enable a unit of this kind to be calculated. Of the one hundred and ninety-eight whose rates for this unit were given by Mr. Jordan's table, it is seen that fifty-three charge \$6.00 for such a house, the next being the \$5.00 rate, which is charged in thirty-six cities; and the only other rate common to more than ten cities is the \$4.00 rate, found in fourteen cities. The rates between \$6.00 and \$10.00 contained odd cents and fractions in a number of cases, and in preparing our table from the itemized table we have reduced all rates to the nearest 25 cents and grouped them accordingly.

In the second table about 60 per cent of the cities are found to have rates between \$4.00 and \$6.00, both inclusive. The maximum rate is nine times the minimum. There is still greater

variation in the meter rates, the maximum of these being fifteen times the minimum.

In the cities where meter rates only are charged, with no flat rates, the following rates are each found in one city only: 10 cents, 10 2/3 cents, 13 cents, 14 cents, 16 2/3 cents, 19 cents, 21 1/3 cents, 22 2/3 cents, 26 cents, 33 cents, 35 cents, 48 cents. Fifteen cents was found in three cities, 16 in two cities, 20 in three cities, 25 in four cities.

In discussing these Mr. Jordan stated that he found that practically all cities which have installed water filtration plants during the past few years have found it necessary to increase their rates in order to meet the increased expenditures of interest and depreciation on capital investment and the additional cost of operation. This he found to be especially true in the case of Columbus, Ohio, Pittsburg and McKeesport, Pa. The meter rate per 1000 gallons in Columbus is 16 cents maximum and 12 cents minimum; that in Pittsburg is 18 cents maximum and 10 cents minimum; in McKeesport, 26 2/3 cents maximum and 9 1/3 cents minimum. These rates have been advanced during the past two or three years from the following maximum and minimum rates previously in force: Columbus, 8 cents straight; Pittsburg, 18 cents and 6 cents; McKeesport, 20 cents and 6.4 cents.

Comparing rates where the water is furnished by a private company with those where the plant is municipal, we find the meter rates to average 30 cents where the water is supplied by private company and 20 cents where supplied by municipal plant. In the flat rates the average rate for a six-room house is \$7.06 where supplied by private company and \$6.05 where supplied by a municipal plant. This would appear to indicate that water can be furnished more cheaply by a municipal plant than by a private company; but we have several times called attention to the unreliability of any such comparisons, owing to the fact that a part of the operating expenses, sinking fund or other overhead charges may not be provided for in the municipal rate; and to the general condition, found in private as well as municipal plants, that the rate is seldom based upon any intelligent and scientific calculation, and that in the case of many private plants, but of perhaps the majority of municipal ones, water is furnished for public buildings, street flushing, etc., without any charge against the municipality.

METER RATES IN 249 CITIES

Rate Cents per 1,000 Gals.	No. of Cities.	Rate Cents per 1,000 Gals.	No. of Cities.	Rate Cents per 1,000 Gals.	No. of Cities
4	2	12	7	21 1/3	2
5	2	12 1/2	2	22 2/3	5
5 1/3	1	13	3	23 1/3	2
5 2/3	1	13 1/2	3	24	1
6	4	14	2	25	36
7	2	15	14	26	7
7 1/3	1	16	11	27	2
8	5	16 2/3	4	28	2
9	1	17	1	30	31
9 1/3	1	18	7	31 to 35	13
10	17	18 2/3	5	36 to 40	11
10 2/3	1	19	1	41 to 50	8
11	1	20	29	60	1

RATES FOR SIX-ROOM HOUSE, WITH HOT AND COLD WATER
IN KITCHEN, IN 198 CITIES

Rate Dollars Per Year.	No. of Cities.	Rate, Dollars per Year.*	No. of Cities.	Rate, Dollars per Year.*	No. of Cities.
\$2.00	2	\$5.50	7	\$8.50	1
3.00	3	5.63	1	9.00	3
3.20	1	5.75	2	9.50	1
3.50	1	6.00	53	9.75	1
3.80	1	6.25	2	10.00	3
4.00	14	6.50	7	10.20	1
4.30	3	6.75	4	10.65	1
4.40	1	7.00	9	11.00	1
4.50	10	7.25	1	11.40	1
4.80	2	7.50	2	12.00	5
5.00	36	7.75	1	12.55	1
5.30	4	8.00	8	15.60	1
				18.00	3

* Rates between \$6.00 and \$10.00 are given to the nearest 25 cents.

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will do so gladly and without cost.

FEBRUARY 15, 1911.

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A Semi-Official Municipal Body

It often happens that more beneficial service is rendered
in governmental affairs by non-official than by official organiza-
tions, especially when it is desirable to lift the affairs out of
well-worn ruts. In some cases the non-official organization
openly antagonizes the officials, assuming that they are wrong
in intentions as well as in actions. But we doubt if this as-
sumption is ever correct concerning the majority of officials,
and believe that if the well-intentioned ones should receive as
effective support and encouragement from the citizens as
do the others, our city governments would be greatly im-
proved. To criticize and "muck-rake" gains more publicity
and notoriety for a civic organization than to co-operate
with officials, but the latter is more apt to secure actual re-
sults, besides offering less discouragement to unselfish, capable
men who might be induced to serve the public in official
capacities.

There is described on another page a semi-official body con-
nected with the city government of St. Louis which was
organized with the purpose of securing a recognized co-
operation such as we have referred to, but with the difference
that here the citizen organizations and officials advise to-
gether through the initiative of the latter rather than of the
former; and that the conferences, being held regularly, do not
imply an intention to adversely criticize, but merely a willing-
ness to receive and give opinions and advice on any questions
of policy and conduct which may arise.

There are other objects of this "Mayor's cabinet," one of
the most important being the co-operation among the city
departments themselves; and it is probable that this will serve
to increase the effectiveness of the government even more
than will the support of the citizens. But the latter is the
more novel, and should help to stimulate in the officials that
civic patriotism without which no amount of improvement in
methods will prove effective of results.

Water Rates

EVERY few days we receive an inquiry for data concerning
rates in various cities for water and street lighting from
some subscriber, whose object is to use such figures as a basis
for deciding upon the justness or otherwise of rates charged
or proposed by public service corporations. Such figures are
available, and undoubtedly have their value in arriving at
decisions on this point, but they should be taken as the last
source of information used for this purpose rather than the
chief or only one, being employed for their corroborative evi-
dence only. In fact, owing to the unscientific way in which
most water rates are made up, it is doubtful whether it may
not be dangerous to use them in any capacity at all; since only
a complete investigation of each case can determine whether the
rate in question pays an adequate return upon the investment,
or to what extent the corporation receives other remuneration,
as from hydrant rates or in the form of the franchise granted.
Not only is this method of fixing rates by comparison with those
in other cities inadequate and objectionable because of the
doubtful character of the latter, but the conditions in various
cities on which rates should be based differ so greatly that
there may be excellent and justifiable reasons why rates in one
city should be two or three times those in another.

We can hardly believe, however, that conditions could be
so different as to warrant the rates in one case being fifteen
times those in another. And yet data given on page 226 show
that this is the case with the meter rates listed there; two
cities having a rate of 4 cents per thousand gallons, while one
city has a rate of 60 cents. Moreover, thirty-seven cities are
found to have rates of 10 cents or less, while sixty-six have
rates of 30 cents or more. The wide divergence illustrated
in this table not only shows how useless it is to endeavor
to determine what a corporation ought to charge, by comparing
its rates with those in other cities, but it would seem to offer
almost proof positive that existing rates cannot all of them
have any scientific foundation, but that some must be so low
that the department or company must be operating at a loss,
while others are so high as to be warranted only by extra-
ordinary difficulties and expenses in construction and opera-
tion, if at all.

It would seem from this table that 20 cents was about the
average meter rate in the 249 cities referred to, but we doubt
whether any one in the country is capable of saying whether
this is the average of what should be the legitimate charges in
these same cities. There would seem to be no short cut to
the fixing of proper rates; but the only defensible way is to
adopt the business method of determining what the service costs
(including in this all overhead charges), allowing for a reason-
able profit in the case of a private corporation, and then so ad-
justing rates that they may serve to place and keep the depart-
ment or company on a sound financial basis and at the same
time give as nearly uniform justice to all consumers as is
possible.

EMSCHER TANKS FOR ERIE

For the Classification of Sewage to be Discharged Into Lake Erie—Detail Plans for Fifteen Million Gallon Plant

THE City of Erie, Pa., is quite completely sewered, but the system discharges at present at a number of points along the waterfront, most of them in Presque Isle Bay, a portion of Lake Erie almost entirely surrounded by the city on the south, the peninsula of Presque Isle on the west and north and points of land partly natural and partly artificial at the east end, at which point a channel between breakwaters is provided for the passage of shipping from the lake to the docks along the bay waterfront. There is also considerable filth which finds its way into a stream called Mill creek, which approximately bisects the city into an eastern and western half.

There has resulted from this a very serious condition which makes it necessary for the city to withdraw from Mill creek the pollution which enters it and also to prevent the nuisance now being created in the harbor by sewage discharged among the docks. In working out these problems the solution of the former appeared to be comparatively evident and simple—the construction of an intercepting sewer through the valley of Mill creek. This was decided upon some time ago, and most of this intercepting sewer has already been constructed, beginning from a point about five blocks back from the waterfront and terminating well out toward the limits of the settled part of the city. Plans for the prevention of a nuisance along the waterfront were prepared last year by City Engineer B. E. Briggs, Mr. Rudolph Hering being called in as consulting engineer. These plans were approved (with one or two minor provisions) by the Pennsylvania State Board of Health on December 29 last. From the Board of Health permit and the report of Engineer Briggs, supplemented by additional information from the latter, we have prepared the following description of the proposed plan:

In addition to the intercepting sewer along Mill creek it is proposed to build another interceptor following along the waterfront east and west from Mill creek, to receive the dry weather flow of all of the sewers which at present discharge there. The west waterfront interceptor will join the Mill creek interceptor near the outlet of this creek into the harbor; and an east interceptor will join the short trunk sewer formed by the combination of the two former, a short distance nearer the lake. This east interceptor will drain land so low as to necessitate pumping. Just below the junction of these three interceptors will be located a plant for treating the sewage. The effluent from this plant will be carried by a long sewer outlet, which will be conveyed into the lake at a point where there is 26 feet of water, this point being 3,800 feet off shore and 4,500 feet from the entrance to the harbor, at which point the effluent will be discharged through a number of outlets into Lake Erie.

The site selected for the purification plant is a piece of land bordering the shore of Presque Isle Bay at its eastern extremity and lying between the bay and the junction of the interceptors. The general features of the purification plant are a combination screen and grit chamber and three pairs of settling tanks and sludge drying beds. From the junction of the intercepting sewers a concrete aqueduct will be carried across the creek with a 26-foot span, and the sewage, after passing over this, will flow in a northerly direction through a concrete culvert under the railroad tracks to the grit chamber immediately north of the tracks.

At the entrance to the grit chamber is a screen of bars with 2-inch slots between them. The grit chamber, which is a rectangular trough of concrete 94 feet in length, is divided into three compartments by two partition walls running parallel for almost the entire length, but coming together and forming V-shaped ends to the middle compartment. This arrangement is for the purpose of permitting the sewage to flow into either of

the two outside compartments while the other one is being cleaned and also to provide a middle chamber for taking care of the increased discharge from the sewers during rain storms. At the two ends of the grit chamber, extending from the V-shaped ends just described, there are short partition walls dividing the grit chamber into two compartments only; and at this point at the upper end of the grit chamber there is, in each of these compartments, a $\frac{3}{4}$ -inch bar screen. At the ends of the chamber each of these two compartments is 5 feet 1 inch deep by 8 feet 3 inches wide, but narrows to 6 feet 3 inches where the third compartment is introduced; this middle compartment being 3 feet 6 inches wide. During normal flow of sewage the depth in the grit chamber will be approximately 3.3 feet and the velocity 0.9 foot per second.

The object of the grit chamber is to intercept the larger floating matters and to collect the sand and gravel which may reach the sewer and which might otherwise find its way into the sludge-collecting wells of the Emscher tanks and interfere with their proper operation. It is proposed to roof over the grit chambers in order to afford protection for the laborers in cleaning them and to prevent a nuisance from the odors.

From the grit chamber the sewage passes through a short length of rectangular trough 4 feet by 3 feet 2 inches, which carries it to the settling basins. Of these basins there are three, each of which is divided into two sections by a submerged baffle wall, which rises to a point $2\frac{1}{2}$ feet below the surface of the sewage in the basin. Each double basin is 28 by 28 feet at the top, with walls slightly battering for a depth of about 20 feet, and a batter of two to nine for an additional 9 feet, below which there is an inverted cone shaped bottom, the apex of which is 6 feet below the base. Beginning a short distance below the top in each basin are two slabs, one sloping from each side on a slope of 1 to 1.2, forming a V-shaped

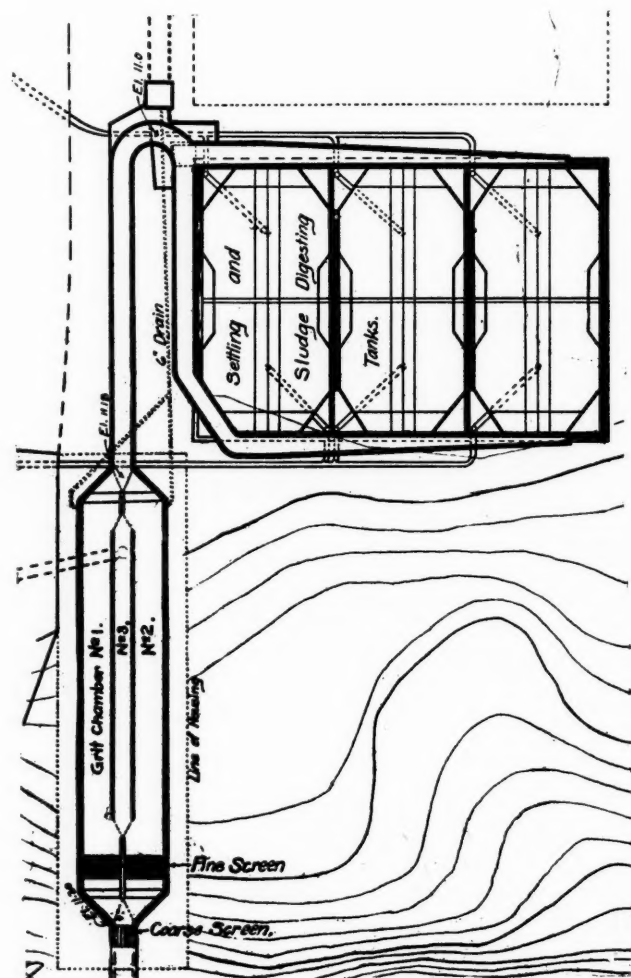


FIG. 1—GENERAL PLAN OF PLANT

trough in the top of the basin. These slabs (which may be constructed of wire glass, or possibly of reinforced concrete) do not entirely come together at the bottom, but their bottom edges are 4 feet 8 inches apart, leaving a slot of this width through the center of the basin. Suspended in this slot is a hollow horizontal bar of triangular cross-section, with its base horizontal, 5 feet in width and 20 inches below the bottom of the inclined slabs. This leaves a space between the bottom of each slab and the side of the hollow bar of about 1 foot. These

basins are designed to act as Emscher tanks, the principle of which has been described in previous issues of MUNICIPAL JOURNAL AND ENGINEER. The suspended matter in the sewage,

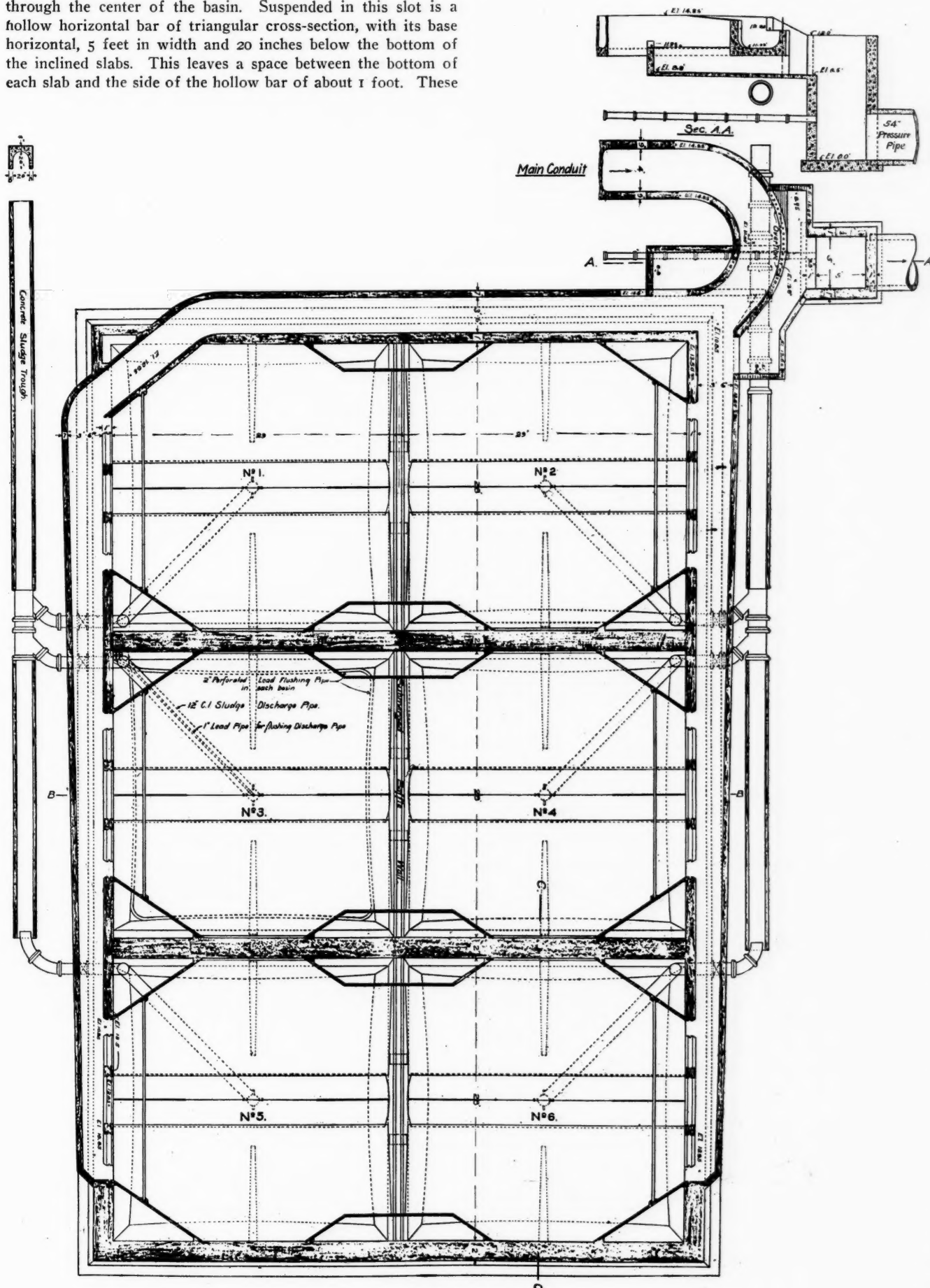


FIG. 2—GENERAL PLAN OF EMSCHER TANKS

in settling down, falls upon the inclined slabs and, owing to the smooth surface and steep pitch of these, slides off of them and through the 1-foot slots at their lower edges into the bottom of the basin, which acts as a sludge well. The purpose of the hollow horizontal bar referred to is to prevent the gases which form in the sludge well from rising up into the trough, this being accomplished through the protruding of the base of the bar 2 inches beyond the bottom edge of each slab; the gases therefore rise up on the under side of the slabs rather than rising through the slot.

Each of the sludge wells (called "sludge digesting tanks" on the plan) has a capacity of 6,850 cubic feet—that is, 13,700 cubic feet to each double basin, or 41,100 cubic feet for the three basins planned for in the first installation. It is estimated that this furnishes sufficient capacity for holding four months' deposit of sludge. The settling flumes, or upper trough-like portions of the tanks, have a total capacity of 54,800 cubic

feet, which would insure a sedimentation period of 40 minutes during normal flow, which is estimated to be 23 cubic feet of sewage per second; and a sedimentation period of 24 minutes during a rain storm, when it is estimated that 38 cubic feet per second will reach the plant. It is not supposed, of course, that this estimate would provide for all of the run-off. In order to limit the quantity of storm water which may enter the intercepting sewers, an overflow is provided at each connection between the existing combined sewers and the proposed interceptors. Also, to guard against excessive floods, it is proposed to provide an overflow in the side of the aqueduct which carries the sewer across the creek and another at the well between the grit chamber and settling basins.

To insure the equal distribution of sludge throughout the entire length of each basin the channel which distributes the sewage to the several tanks is so arranged that, by manipulating gates in this feeder trough, the direction of flow through

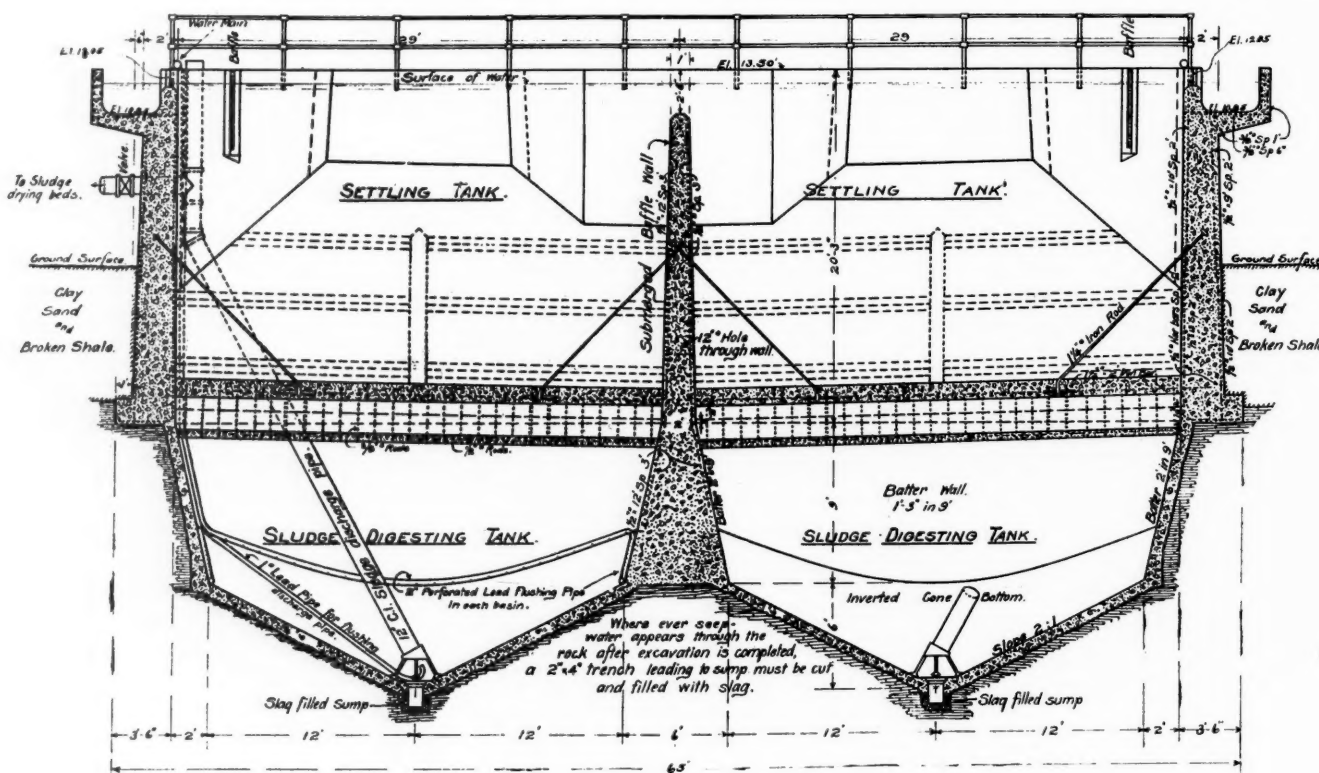


FIG. 3—SECTION ON B B OF FIG. 2

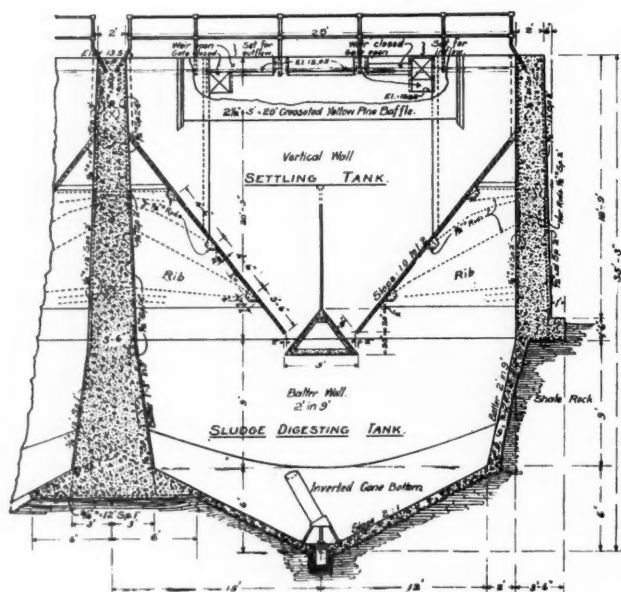


FIG. 4—SECTION ON C C OF FIG. 2

the basins may be reversed, the sewage entering from either end of the tank and discharging at the opposite end. Each tank is provided at each end with gates and weirs for regulating the inflow and outflow of the sewage.

The effluent, after flowing through the settling trough portion of a pair of basins, is discharged into a well from which a 54-inch pipe extends in a northeasterly direction, passing for a distance of 2,500 feet through the grounds of the Soldiers and Sailors' Home and thence for 5,500 feet under the lake to an outlet in 26 feet of water. At the end of this outfall pipe is placed a cap which can be removed should it be decided at any future time to extend its length. At the end this outfall branches into two dispersion pipes, each 40 inches in diameter at the main outfall and tapering to 26 inches at the outer end. One of these dispersion pipes extends 80 feet to the north and contains 53 dispersion orifices in its upper quarter, each orifice being 5 inches in diameter. The other dispersion arm extends to the east 60 feet and contains 40 dispersion orifices.

The sewer invert at the junction of the interceptors is 13.3 feet above mean lake level, which permits the use of this amount of fall in the purification plant and as a head to force the sewage through the outfall main. This outfall main starts at the well with an invert elevation of zero and is laid on a

continuously descending grade to its outer end. Observations conducted by City Engineer Briggs in pleasant weather show that the currents at this point may be in any direction, depending entirely upon the strength and direction of the wind. When the wind is from the west the surface and lower currents travel together; when the wind is from the east they move in opposite directions. This condition would seem to favor general dispersion, and it was concluded that no more favorable point for the discharge of the clarified sewage could be found within a reasonable distance of the disposal plant. The city water works intake is five miles distant and on the other side of the peninsula known as Presque Isle.

The sediment which collects in the sludge digesting tanks—that is, the bottom portions of the Emscher tanks—will be removed after it has been well digested, a portion from the bottom of the tank being drawn off from time to time onto sludge drying beds. A 12-inch pipe, placed inside the tank, leads from the bottom of each digesting tank, its lower end resting upon a cast iron pedestal at the center of the bottom and its upper end resting against and attached to the upper portion of one side of the tank, where, at a point $5\frac{1}{2}$ feet below the surface of the sewage in the tank, it is continued horizontally through the wall. This is the sludge discharge pipe, and the $5\frac{1}{2}$ -foot head suffices to force the sludge through this pipe onto the sludge beds; the discharge through the pipe being controlled by a valve just outside the tank.

The sludge drying beds are designed to occupy an area of 10,400 square feet; to be underdrained with 3-inch drain tile placed in lengths 6 feet between centers and covered with 1 foot of coarse cinders.

The clarification portion of the plant is planned with a view to future extensions which would double its capacity. The cost of the plant, from the junction of the intercepting sewers to the end of the dispersion pipes in the lake, is estimated at \$220,000; which estimate does not include the cost of the four acres of land on which the plant is to be located.

Concerning the disposal of the sludge upon beds, the State Board of Health, in its permit for constructing the plant, states:

The proposed disposal of the digested sludge is looked upon with some apprehension. It is problematical to what extent bacterial activity will destroy the organic matter in the sludge. No experiments have been conducted in Erie to determine the question for Erie's sewage. If the processes were impeded for some unknown reason there would likely be a nuisance accompanying the proposed drying out of the sludge. The site selected for the sewage works is not over 1,000 feet from dwellings. It is in a section of the city devoted to manufacturing pursuits and adjacent to land which in the future will be used for dockage purposes. The only other available site for sewage works is that on Presque Isle, and the cost of works to convey the sewage to this point would be greater than the entire cost of the disposal works proposed. It is feasible to dry out the sludge taken from the digestors in mechanical dryers and to dispose of the matter by combustion. The local authorities are now considering the destruction of the city garbage by cremation. The practicability of erecting the crematory on the land bought by the city for the sewage works should be considered in connection with its possible utility as an adjunct to the sewage disposal works. . . . The Emscher tank process has been tried out in practice in Europe sufficiently to have established it as worthy of careful consideration. However, the degree to which Erie sewage may be treated with success by this process is problematical. The cost of erecting a small experimental station and of conducting practical tests of the process at Erie would be small and the observations made by the experiment would be of great benefit to the city. Practical results should accrue that would make the design or the application of the design of the tank to Erie's needs one of certainty. The State Department of Health does not wish to discount the merits of the plan now proposed, but it believes that the city should go somewhat further with the study of its disposal problem before deciding definitely and finally on definite details for the construction of the works.

It is probable that Council will in a short time arrange for the construction of such an experimental plant early in the spring and the conducting of such experiments throughout the balance of the year and possibly longer.

BITUMINOUS CONCRETE ROADWAYS

At the convention on January 24 of the New Jersey State Association of County Engineers the president of the association, Mr. Fred J. Eppele, Engineer of Mercer County, discussed the matter of bituminous concrete for road construction and the patents thereon.

As to the desirability of this form of pavement, he stated:

"After due consideration I am prepared to place myself unqualifiedly upon record in stating that a form of construction calling for the use of a mineral aggregate, so proportioned as to size as to give the greatest possible degree of density and which provides for the mechanical coating, while hot, of said aggregate with the required amount of a first-class bitumen of the proper consistency will produce, when laid upon a good base, an ideal wearing surface for either new or renewal construction work. I will not even qualify this statement by referring to the question of initial cost. In my judgment, any reasonable difference in first cost will be more than balanced in a very few years by its superior conditions during all seasons of the year and the undisputed increased length of service it will give; and these advantages will, without doubt, result in the end in an actual saving in total cost when compared with other forms of construction."

It is to be borne in mind that in making this statement Mr. Eppele refers to roads and not to city pavements.

The recent decision of the Circuit Court in the case of Warren Brothers against the City of New York, which was reported in our issue of December 21, 1910, is discussed by him. He quotes from the report the statement that "Any one using a Warren pavement will infringe, no matter how the pavement is produced"; the method of production especially referred to by the court being that of using run-of-crusher stone instead of actually proportioning various sizes of aggregate. Mr. Eppele states:

"It would seem from this broad and sweeping opinion of the court that any form of pavement composed of mineral aggregate so proportioned as to size as to produce a mass having 21 per cent or less of voids at the time of construction, or which will at any later date constitute a mass having this percentage of voids, even if this latter condition be due to changes of temperature and the action of forces over which the contractor or owner has no control whatever, would constitute an infringement upon the Warren patents."

Mr. Eppele stated his belief that all engineers would admit that perfection in road paving composed of mineral aggregates would approach perfection in proportion as they approach maximum density, and that the paramount principle was grading to produce such density. If the opinion of the court is upheld by the higher courts, this class of roadway could not be used in anything approaching a condition of maximum efficiency without infringement. The speaker suggested, as a remedy for this, that States and counties should enter directly into agreement with the owners of the bitulithic patents, paying royalties to cover all work in such State or county under such specifications as the several engineers might think best to adopt.

Only in this way, he thinks, can the engineer be free to prepare specifications calling for whatever quantities of binder, sand and stone he may consider necessary to produce the best results; and in road work, as in other engineering work, there is a general feeling that specifications rather than trade names should form the basis of awarding contracts for either materials or construction. In fact, in several States it is required by law that the engineers prepare specifications on which it is possible for more than one or two to present competing bids for all kinds of public work.

Should the decision referred to be sustained by the Court of Appeals and the Supreme Court there is a question as to how far-reaching its effect will be; whether gravel taken directly from the gravel bank and mixed with bituminous filler, for example, would not be an infringement. Considering the vast amount of work of this character which is being constructed and is contemplated in all parts of the country, this decision would seem to be one having the most general importance of any which may be before the court.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

ROADS AND PAVEMENTS

Sandstone Best Paving for Use on Hills

Beloit, Wis.—"Sandstone paving for steep hills is certainly the best preventive for slipping that I know of," said Robert Caldwell, City Engineer, after returning from Milwaukee, where he inspected the stone used there. "I rode up a hill about as steep as our own St. Lawrence avenue hill on a wagon with an immense load drawn by three horses and the horses' feet didn't slip half an inch before they got a hold on this stone," he said, pointing to the sample of sandstone with which the Council is contemplating paving certain Beloit hills. The stone is not cheap, says the City Engineer, but it does have the great merit of being the only paving for hillsides on which horses will not slip. Mr. Caldwell suggests that it is not necessary that the entire roadway be covered with the sandstone block, but a strip sixteen or twenty feet wide down the center of a hill could be paved with sandstone and the sides with ordinary brick.

Build Two Miles of Walk in Day

Clifty, Tenn.—In accordance with plans adopted at the mass meeting held here on the night of Jan. 14, the citizens of this place turned out February 1 to build sidewalks over the town. More than one hundred men and a number of boys volunteered to do a good day's work, and thirteen wagons and teams were gratuitously provided for the project, and the work was vigorously and systematically prosecuted. Most of the men were mine workers, and had their own tools. A rain interrupted the work and it was completed a few days later by the volunteers. As a result, Clifty now has over two miles of sidewalks.

Report of Erie Grade-Crossing Elimination

Erie, Pa.—At a recent Council meeting Consulting Engineer George H. Kimball explained the final plans for the elimination of grade crossings. The main points covered by the report follows:

Total undivided cost, \$1,421,682.36.

Location of new passenger station between Peach and State streets with subway entrance.

Elevation of main tracks at Peach street, nearly eight feet.

Number of tracks—Three main tracks on each side and three tracks for local trains at each end of union station.

Space allotted to railway use—All property between Fourteenth and Fifteenth streets.

Final report placed on record at the city hall is accompanied by plans and includes the preliminary report made to councils Aug. 27, 1910.

Much Street Work Done in Wichita

Wichita, Kan.—City Engineer Bert C. Wells advises that 1910 has been a banner year in public improvements in Wichita, and he doubts if any city of equal size—55,000 population—has done so much. The record of the work done is as follows:

Asphalt pavement: 12.88 miles constructed at a cost of \$587,693.55.

Bitulithic pavement: 4.17 miles constructed at a cost of \$195,527.22.

Brick block pavement: 3.13 miles constructed at a cost of \$128,899.42.

Total, with other kinds of pavement and work done on uncompleted contracts, 20.8 miles, and a total cost for pavement work of \$1,018,989.73.

A reinforced concrete dam was completed across the Little Arkansas River at a cost of \$24,469.29.

Thirty-three miles of sidewalk built; 10½ miles of curb built, exclusive of curb built in connection with the pavement; 5.6 miles of gutter built, exclusive of gutter built in connection with the pavement.

Sanitary sewers: 23.6 miles constructed at a cost of \$134,839.86.

Storm sewers: 2.5 miles constructed at a cost of \$43,984.81.

Total expended for sewers in 1910, \$178,824.67.

Total amount expended under the supervision of the Department of Public Improvement for the year 1910 was \$1,299,507.03.

Expenses of the department, \$35,865.24.

Sewer contracts for the coming year, amounting to approximately 50 miles, have already been ordered. Pavement contracts and petitions granted, 20.4 miles of pavement to be built in 1911.

In view of this record, the city's motto, "Watch Wichita Win," goes without saying.

Paving in Montgomery in 1910

Montgomery, Ala.—Last year Montgomery laid 4.5 miles of paving. The amounts in linear feet of roadway of each kind laid is as follows: Asphalt, 17,320; wood block, 902; mineral rubber, 446; gravel, 3,900; bitulithic, 849; granite block, 342; gravel roadway, 1,300. The linear feet of curbing laid was 48,379; gutter, 7,248.

New Riverside Drive Section Open

New York, N. Y.—The section of the Riverside Drive extension between 145th and 158th streets has been completed and opened. There was no ceremony to mark the completion of what is one of the most important sections of the work and which has been six years building, under the direction of George Stuart Williamson as chief engineer. It includes the steel cantilever structure which carries the driveway over the New York Central tracks between 153d and 155th streets. The construction work was done by J. C. Rodgers. The total width of the roadway from curb to curb is 60 feet, except where it is divided by six-foot parking into two roadways of equal width. A 22-foot bridle path is built adjacent to the main roadway, from which it is separated by parking, and does not always parallel the main road. The cantilever cost \$250,000. It is 100 feet long and 50 feet wide. The handsome masonry supporting it is one of the engineering novelties of the drive. When the drive is completed it will be eight miles long and will have cost \$25,000,000. A resolution has been passed by the Board of Estimate practically discontinuing for the present the extension of Riverside Drive north from 155th street. Plans were drawn for the extension of the drive to Spuyten Duyvil three years ago and part of the work has been done. When the present Board of Estimate came into office, however, it decided that the plans were not what they should be and the work was discontinued. The new resolution provides for the redrawing of the plans. It has been estimated that the cost of the extension, including the proposed Hudson Memorial Bridge, will be about \$13,000,000.

Will Give Patrol System of Maintenance a Trial

Paterson, N. J.—The Road Committee of the Board of County Freeholders of Passaic County have decided to give the patrol system of road maintenance a trial. A beginning will be made by employing three men on this work. Each man will be provided with a horse and cart, or a wheelbarrow, and road materials will be delivered in advance of immediate needs along the road. The man will be paid \$75 for eight months, or \$600 a year. It is expected that he will use about \$200 worth of materials. On roads of light traffic it is believed that one man can take care of nearly 10 miles.

Would Make Concrete Cubes by Prison Labor

Rochester, N. Y.—County Superintendent J. J. McClintock read a paper last week before the Fairport Grange, in which he advocated the employment of the labor of the penitentiary in making concrete cubes for road construction. The most practicable material for road making in this county, Mr. McClintock said, is two-inch artificial cubes of gravel concrete made with Portland cement, "because it will stand well under ordinary traffic and there is abundance of gravel and it is the cheapest. These cubes can be made satisfactorily without skilled labor and their manufacture by the convicts in the county penitentiary would be most advantageous to the men and the community."

Roads of Washington County, Pennsylvania

Washington, Pa.—Washington county had up to January 1, 1911, 36.7 miles of county roads improved with macadam or brick at a cost of 85,791. The work under contract, 12 miles, is estimated to cost \$152,221. There were also 27¼ miles approved by the Grand Jury but not under contract, estimated to cost \$356,661. Besides this the county has 22.15 miles improved under the State act, costing \$266,917.

New York State Highway Commission Report

Albany, N. Y.—The report of the New York State Highway Commission to the Legislature says that of the original fund of \$50,000,000 appropriated for road improvements, \$28,000,000 remains unspent. When the whole of the appropriation is spent, the system of state and county roads will be not much more than half completed and \$40,000,000 will be required to finish. The work now completed and under contract amounts to 2,850 miles, of which 1,787 were built during the ten years preceding January 1, 1909, and the balance during 1909 and 1910. The item of maintenance and repair in 1909 was \$1,500,000, of which \$900,000 went for resurfacing and the balance for less complete repairs. In 1910, the amount was \$1,800,000, including \$725,000 for resurfacing. In this year the mileage maintained was 2,200 miles, and the repairs were ordinary, maintained by patrol system oiling. The amount oiled was about 1,000 miles at a cost of \$350 per mile.

While the number of miles macadamized is a small percentage of the total of 80,000 miles, a sufficient amount has been completed to form continuous improved roads between many of the principal cities of the State. The longest single stretch contemplated is that from New York to Buffalo, 487 miles, which will be the longest continuous State road in the world.

Several interesting comments are made in the report. The use of a top course of bituminous material has been found very satisfactory both in eliminating dust and in withstanding traffic. The scarcity of labor and materials are noted as causes which have retarded work. The cost of labor is estimated to have increased 25 per cent, while its efficiency has decreased. The demand for 16-ft. roadways instead of 12 has also increased construction cost. A million dollars has been saved by building reinforced concrete culverts and bridges.

The River Boulevard to Bay City

Saginaw, Mich.—A project of exceptional attractiveness and of much promise to the future is the plan to build a boulevard following the course of the river between Saginaw and Bay City. Its practicability lies in the river improvement which is about to be commenced by the federal government. In fact, it is to be made a feature of that improvement. The dredging operations will remove an immense quantity of earth from the bottom of the river which can be deposited without extra cost in the course laid out for the boulevard, where it will make a first-class permanent bed for the road. Practically all of the right of way along the river has been secured, so it will be seen that substantial progress toward the undertaking has been made. The government has signified its willingness to make its work conform to the enterprise, and will give the two cities reasonable time in which to close contracts for ground over the complete route. The real worth of this boulevard enterprise is the fact that it will create a river-side drive between Saginaw and Bay City.

Delaware River Boulevard Proposed

Trenton, N. J.—If a bill introduced in the Assembly by Mr. Meyer, of Sussex County, shall become a law, and the proposition it involves shall be made a reality, the city of Trenton will be the southerly terminus of a magnificent Delaware Valley boulevard, which will be a counterpart of the ocean boulevard, already being planned for Eastern Jersey. The road is to be known as the Delaware River Drive. The bill appropriates \$15,000, or as much as may be needed for the expense of designating a route for a continuous improved highway commencing at the boundary line between the states of New York and New Jersey in Montague Township, Sussex County, and continuing thence to this city, following, so far as practicable, the available and convenient improved roads now constructed. The route is to be as near the Delaware River as practicable. The scenery along this proposed highway is notable for its beauty, and if it were constructed it would unquestionably become one of the most popular automobile roads in the State. It is believed that the increase in property values contiguous to it would in itself justify the expenditure. Certainly it would be a valuable addition to the fine road system of New Jersey.

SEWERAGE AND SANITATION**The Sewage Problem in Dallas**

Dallas, Tex.—It seems very probable that the question of diverting the city's sewage from the Trinity River, or of otherwise disposing of it, will be made an issue in the approaching municipal campaign. Two of the regularly organized political clubs for the election of Dallas city officers have announced their platforms and in each of them is a plank demanding sewage diversion. The other political organization has not yet announced its platform. In April, 1910, the taxpayers of Dallas expressed their desire for sewage disposal by authorizing at the polls a bond issue of \$650,000 for that purpose. As yet no effort has been made by the present city administration to issue those bonds. Bonds in the same amount were issued for other purposes at the same time and have already been sold, the money now being used for the specified purposes.

Alarm System for Health Department

Milwaukee, Wis.—Extension of the use of fire and police alarm and telephone systems to the Health Department under the proposed consolidation is advocated by the Health Commissioner. He said that the 30 field men of the Department were required to pay every time they used a telephone to report and that this expense could be eliminated by extending the use of the telephone to inspectors. The Department has 15 sanitary, five factory, four milk and six meat inspectors.

Anti-Spitting Ordinance Will Be Enforced

Louisville, Ky.—Dr. W. Ed. Grant, Health Officer, has issued another statement dealing with the anti-spitting law and its enforcement. Dr. Grant's statement is as follows:

"Enforcing the anti-spitting ordinance at the present time is not a farce. The Board of Safety, recognizing the law as one pertaining to the health of the community, has requested the Department of Health to see to its enforcement, and has promised all the aid the Police Department can give in enforcing the ordinance."

"After consulting with the Chief of Police, it was deemed best to have policemen board the cars which carry the workmen from the shops every evening and announce to them that the anti-spitting ordinance was about to be rigidly enforced, in this way giving them an opportunity to avoid arrest. Policemen in plain clothes will be placed upon the cars and in public places to-day. This would have been done at the beginning of this week except for the fact that the end of the month was at hand, when a shift takes place in the police force, and for that reason it was delayed until after the first of the month."

"The Police Bulletin contains the announcement that the anti-spitting ordinance is to be rigidly enforced, and that it is the duty of every policeman on the force to arrest all who violate the law. It is the duty of every citizen of our town to aid us in enforcing this ordinance, and all they have to do is to call on the Chief of Police and give him the name of the offender and testify to the truth of their charge."

Rat-Proof Buildings Recommended

New Bedford, Mass.—The Board of Health, in their annual report for 1910, recommend that all buildings erected in the future in the city be of rat-proof construction. The recommendation to the Council reads as follows: "As rats are carriers of disease, and at times cause terrible plagues, the City Council is respectfully requested by the Board of Health to cause all buildings erected in the future to be of rat-proof construction."

For City Milk Licenses \$25

Albany, N. Y.—Assemblyman James A. Foley, chairman of the Assembly Codes Committee, has introduced in the Assembly a bill to regulate and control the milk traffic in the cities of New York, Buffalo and Rochester. The measure provides for the establishment of a milk commission, consisting of three members to be appointed by the Governor, to have general supervision of all milk dealers, with power to fix standards of quality and purity, together with the maximum prices that can be asked or demanded from consumers for milk of such standards, and also with power to order yearly reports from all milk dealers and to enter and inspect their plants and to examine their books and papers and to subpoena witnesses and take testimony. Every milk dealer would be required to obtain a license from the commission at a yearly fee of \$25, which, it is expected, would defray the expenses of the commission. These licenses can be revoked or canceled by the commission at any time for a violation of any order of the commission.

Water and Sewerage Under State Control

St. Paul, Minn.—A comprehensive bill, giving the State Board of Health supervision over public sewer and water systems has been introduced in the Senate by J. M. Hackney, of St. Paul. A duplicate of the bill was introduced in the House by E. G. Perry, of St. Paul, and Kerry Conley, of Rochester. The bill does not apply to the municipal water and sewer system of cities of more than 50,000, but applies to the systems in all smaller towns, whether owned by the municipality or by private parties. It also gives the board supervision over the plants owned by the State for its institutions. The bill requires every municipality, corporation or individual supplying water to the public to file within six months a certified copy of the plans and surveys of the system, showing the sources of the water supply. No other source of supply shall thereafter be adopted without the consent of the board, nor shall any new plant be constructed without the consent of the board nor shall any new plant be constructed without the consent of the board after the filing of the plans with the board and an inspection by its officers. Whenever written complaint is made that sewage is emptied into any stream, lake, pond or other place, so that it creates a public nuisance, the board, after a hearing, may order the sewer system changed to remedy the nuisance. When the local Board of Health or health officer or ten electors complain that the water supply is dangerous the State Board, after a hearing, may order that it be improved. If any water or sewage purification plant is not working properly the board may order an improvement, and if in five days the effluent is not improved it may employ a capable person to run the plant and charge the cost to the municipality. Whenever there is objection to any order made by the State Board the complainants and the board shall each appoint a sanitary engineer to consider the matter and decide. If they cannot agree they shall appoint a third person. The bill also makes provision for an appeal to the courts. The bill permits the municipality to issue bonds to make improvements made necessary by the order of the State Board, provided they shall not exceed 3 per cent of the assessed valuation of the city or village.

Typhoid May Not Be Due to Water

Wilkes-Barre, Pa.—The report of Health Commissioner Dixon to the Mayor and City Councils on the typhoid situation in the Wyoming valley during the summer of 1910 has been received. He says that there is no reason why water might not have been the vehicle for the transmission of the disease. The Susquehanna River water, the Wilkes-Barre Mountain supply, particularly that of Laurel Run, and the Toby Creek supply are considered dangerous because of the potentiality of these waters to become infected. However, the distribution of the typhoid fever cases does not to a careful observer warrant the conclusion that the public water supply was the absolute cause of the prevalence of the disease.

Typhoid Follows Use of Raw River Water

Bay City, Mich.—An epidemic of typhoid is prevailing. For several weeks raw river water has been turned into the city mains.

Local Health Board Congratulated for Good Report

Huntington, Ind.—Secretary R. F. Frost, of the city Board of Health, has received a letter from Dr. J. N. Hurty, Secretary of the State Board, congratulating the local board on their excellent report and the good sanitary conditions maintained. Dr. Hurty suggests that the city add an anti-fly provision to their sanitary ordinance. In the book of instructions issued by the State Board is a copy of an ordinance which has been found to be effective.

English Expert Likes Columbus System

Columbus, O.—That he had secured more information on municipal utilities in Columbus than any other city he had visited in America was the statement of W. Francis Goodrich of London, England, who spent an afternoon inspecting the sewage disposal plant on which work he is an expert, the light plant, the garbage loading station and the reduction plant. "I am more favorably impressed with the sanitary system here," said Mr. Goodrich, "than I have been by that of any other American city, including even New York and Boston."

WATER SUPPLY

Cuero Has New Water Supply

Cuero, Tex.—The city is rejoicing over the completion of the electric power pumping plant for use in pumping the two recently finished fine artesian wells and now this water fills both the reservoir and standpipe with a combined capacity of nearly 500,000 gallons. It is believed that the city's water problem is now solved for years to come.

Dodge City Water Is Pure

Dodge City, Kan.—The new Dodge City water plant was given a test this week to try out its capacity and power to throw water. Four streams were thrown at the same time in the business district and the force surprised all who witnessed the test. Water was thrown much higher than the business houses and the force so great that the men had difficulty in handling the nozzles. Dodge City now has better fire protection than ever before. In the test, wells were closely watched to note the effect on the supply and it was imperceptible. The water has been analyzed by State chemists and is pronounced pure. A new power house, new machinery, new pipes and mains and other new equipment makes the Dodge City plant one of the very best in the State.

Town Has Profitable Water Works

Kingman, Kan.—Kingman claims to have the best water in the State, and plenty of it. Moreover, the operation of the plant shows a good profit. The receipts for the year were \$6,146; expenses, \$1,878. The number of gallons of water pumped was 47,423,000. The cost of pumping was 4c. per 1,000 gallons. The population of Kingman is about 3,000.

Rush Hudson Water Tunnel

New York, N. Y.—The Board of Water Supply, as constituted by Commissioners Galvin and Chadwick, has passed a resolution authorizing the Chief Engineer, J. Waldo Smith, to prepare a contract for the completion of the pressure tunnel under the Hudson at Storm King, which is to bring the new Catskill water supply to the east bank of the river. For five years test borings have been made in search of bed rock, and this means that the commission feels that it has at last found a means of crossing the river. Commissioner Galvin stated that this resolution was prompted by the discovery that the work on the Hudson River pressure tunnel has so far cost the city \$376 per running foot, whereas investigations made by him convinced him that this work done by contract could be completed at a cost not to exceed \$150 per foot. It is expected that the change will save the city over \$600,000. The work of driving the lateral shafts, making experimental borings in the river bed, etc., has already cost the city \$831,390. In order to have the tunnel built as speedily as possible it is planned to have the contract awarded at once.

Cut in Water Rates Will Benefit 12,000

Providence, R. I.—The water rate to the small user will be reduced on Jan. 1, 1912, from a minimum of \$10 to \$8, the first reduction that has ever been made in this city on the meter service. This will affect 12,000 water users in Providence. There will be no change in the rate on the faucet service nor will there be any change in the scale as now charged to large users, manufacturers and business houses.

Storm Supplies Water for Two Years

San Francisco, Cal.—According to an estimate made by G. A. Elliott, superintendent of maintenance for the Spring Valley Water Company, the storm in January has stored up in the company's reservoirs enough water to supply San Francisco for the next two years. Over 2,164,000,000 gallons of water has been added to the company's supply, and the water which otherwise would sweep over and flood the valley towns have been stored away for future use in San Francisco.

State Board Orders Water Treated

Edinburg, Ind.—The State Board of Health has ordered the water supply to be treated with copper sulphate. In the meantime residents have been ordered not to use the raw water for drinking purposes.

STREET LIGHTING AND POWER

Tungsten Preferred to Arc Lighting

Eugene, Ore.—The city has decided to adopt tungsten street lighting instead of a system of arc lights. The figures on which the decision was based were supplied by Prof. R. H. Dearborn, and are as follows:

Comparative cost of installation:

	Arcs.	Incandescent.
Wire	\$3,103.58	\$3,551.97
Pole lines	6,835.00	10,226.00
Lamps and fixtures.....	9,750.00	3,062.00
Station equipment	1,630.20	998.26
Engineering	639.56	544.15
	\$21,958.34	\$18,682.38

Comparative cost of maintenance per year on basis of 2c. per kilowatt hour for electrical energy:

	Arcs.	Incandescent.
Renewals and trimming.....	\$1,219.00	\$1,636.00
Energy consumed	5,520.00	3,200.00
Totals	\$6,739.00	\$4,836.00

For the city as a whole the ratio of light furnished by arcs is to that given by the incandescents as .0011 is to .0024.

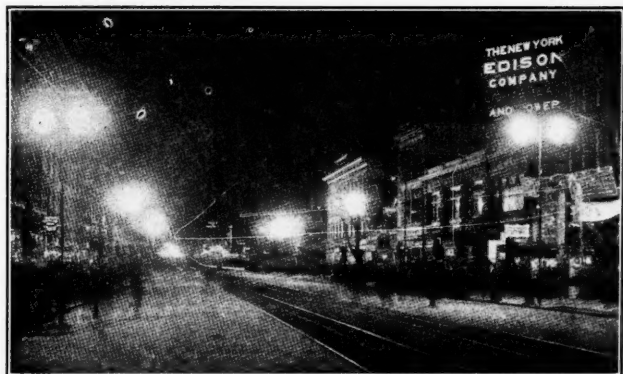
Edison Company Would Purchase Surplus Power

Los Angeles, Cal.—John B. Miller, president of the Southern California Edison Company, in an address before the City Club, outlined a tentative proposition for the purchase of the surplus power from the Los Angeles aqueduct by the California Edison Company. He would have the acceptance of the offer submitted to popular vote. He said:

We believe that we can offer the city, on a rental of this power, \$35 per kilowatt per annum at a consumer's base rate of 7 cents; \$50 per kilowatt per annum if the retail base rate is 6 cents, and \$25 per kilowatt per annum if the retail base rate is 5 cents, and the investment of the city would be only about \$3,000,000 instead of \$6,500,000; and I believe that Mr. Scattergood, were he to go into these figures carefully, would tell you that this would result in as much profit to the city as the city would get if it distributed the electricity itself.

Illumination of 125th Street, New York

New York, N. Y.—The main retail thoroughfare of upper New York, 125th street, will soon be illuminated with a form of twin-lamp white-carbon lighting. The posts will be placed 140 feet apart and the lighting will cost \$3.50 a year for every foot of frontage. An association will be



TRIAL OF SEVERAL SYSTEMS OF ILLUMINATION, 125TH STREET, NEW YORK CITY

formed which will contract with the Edison Company for the lighting, and with the individual storekeepers and owners of real estate for the payment of the assessments. The decision is the result of an exhibition of different styles of lighting made two months ago by the Edison Company. Six different kinds of arc lighting were demonstrated, and Edison men in attendance explained to all questioners the advantages of each. From time to time the lights were shut off, so that the visitors could compare the illumination supplied by the city with the various other lighting arrangements shown. Automobiles were at hand, so that groups of interested individuals could be taken off several blocks to view the effects from a distance.

Electric Meters to Be Examined

Trenton, N. J.—The Public Utility Commissioners have directed their electrical inspector to make an inspection of the meter departments of electric lighting companies.

Gas Company Voluntarily Reduces Price

Petersburg, Va.—The Petersburg Gas Company, through its manager, R. A. Goudy, has promised consumers of the city a 10-cent reduction in the price of gas, a 5-cent reduction, January, 1912, and an equal reduction January, 1913. In order to show the relation between prices and per capita sales he submits the following figures:

Town.	Population.	Sales.	Sales per Capita.	Price (net) Per M.
Lynchburg	36,000	40,000,000	1,300	\$1.25
Portsmouth	20,000	56,000,000	2,800	1.15
Richmond	112,000	405,878,000	4,000	.90
Roanoke	22,000	57,216,000	2,800	1.12½
Norfolk	45,000	254,000,000	5,000	1.00
Newport News.....	27,000	37,102,900	1,500	1.35 light 1.00 fuel
Petersburg	23,400	38,400,000	1,700	1.25

Discussing the general question of cost of gas, he says:

"It is often stated by people unfamiliar with conditions that the cost of manufacturing gas is very low. These people lose sight of the fact that the cost of manufacturing gas in a holder is only one of the four principal divisions that enter into the cost of gas delivered at the consumer's burner. The other three items are distribution of gas, the expenses of the office, and, to perhaps a less extent, the educational or commercial department of the company—the object of the latter department being to teach the people how to get the most out of the gas, how to use it economically in their appliances, and to adjust their appliances and keep them in repair. These four items added together make the cost of gas, and each one of them bears very nearly its proportion of the cost. Then on top of these items, before dividends can be earned, fixed sums must be put aside for depreciation and maintenance to take care of the very condition the Petersburg Gas Company finds itself into-day. This last item that we are obliged to supply in actual cash should have been taken from earnings in the past."

City to Ask for Conduits

Waterbury, Conn.—Waterbury is to renew its fight in the Legislature this winter for the right to establish conduits under the streets of the city and place the tangled mass of wires now overhead underground, removing the ever-present danger to firemen and also greatly improving the appearance of the center of the city. The bill will be introduced by Senator Lawlor. The satisfactory reports of the working of a system recently installed in New Britain is furnishing arguments in favor of the measure.

FIRE AND POLICE

Tenants Must Keep Fire Escapes Clear

Atlanta, Ga.—Investigation in consequence of a fire at which twelve women were prevented from getting out of the building by the fire escape because access to it was blocked has developed the fact that the law does not make the tenant responsible for keeping the way clear. The ordinance cites the owner of the building, which is manifestly unfair, as he cannot be expected to be on the premises all the time. Chief Cummins, of the Fire Department, will request the City Attorney to draw up an ordinance placing the responsibility where it belongs, on the tenant.

Fire Protection to Outside Factories

Bridgeport, Conn.—The Fire Commissioners are puzzling over the question of affording fire protection to factories and business concerns just outside the city lines. President Wheeler has asked the City Attorney to define the Board's legal duties in the matter. As a practical question there is much to be said on both sides. Call boxes have been installed for some time in some of the factories, and it would not seem right to withdraw the protection without notice. Then if protection is given one factory how can it be denied to another? A citizen, on the other hand, can argue what protection has his property in the city in case the apparatus is responding to an alarm beyond the limits. The practical answer would seem to be to enlarge the Fire Department and charge the factories for the protection.

Cost of Maintenance of Horse-Drawn and Auto Apparatus

Lynn, Mass.—During the month of January, Chief Harris has kept a strict account of the cost of maintenance of the two combination wagons, one horse-drawn and the other a motor, and also the work done by each. The result of account is: Automobile combination chemical—Number of alarms answered, 21; mileage covered, 683.5; cost of maintenance for the month of January, gasoline, \$4.26; batteries and connections, \$1.88; oil, 8c.; total cost, \$6.88. Horse-drawn combination (three horses)—Number of alarms answered, 2; mileage covered, 4; cost of maintenance, hay, \$15.81; oats, \$9.90; straw, \$1.70; shorts, \$2.15; horseshoeing, \$4.09; medicine for horses, 50c.; total, \$34.15.

Auto Engine Protects District of Low Pressure

Yonkers, N. Y.—The new 90-horsepower, six-cylinder auto engine has been received from the Webb Motor Fire Engine Company. The engine will be housed on Shonnard Terrace, and will serve a large hilly district in which the water pressure is low.

Asks for More Firemen

Troy, N. Y.—Chief Byron, of the Fire Department, in his annual report to Commissioner of Public Safety Mann, recommends ten additional hosemen and two more ladder-men for the paid department. He also recommended that the pay of the paid department be increased and suggested that the salaries be fixed at \$60, \$65 and \$70 a month for first, second and third grades.

Want City to Name Fire Chief

Wilmington, Del.—Wilmington firemen are interested in the proposed legislation, which, if passed, would make the position of Fire Chief and his assistants appointive offices under the control of City Council. Some of the older members of the companies agree that the service might benefit should Councils have control of the appointment of a Chief who in their opinion should be given absolute control of the department. They, however, are not prepared to accept the plan that places both assistants under Council, but think that the assistants should be chosen by the organizations, as is the rule at the present time.

GOVERNMENT AND FINANCE

Municipal Ownership Bill

Albany, N. Y.—Municipal ownership of public utilities is provided for in a bill introduced by Assemblyman O'Connor. It provides that any city by the adoption of a proposition therefor may acquire and operate municipal gas and electric light, heat and power plants and railways. The local legislative body of the city is given full power to make regulations regarding the operation of such plants, including the fixing of rates. The local legislative body may also lease a municipal plant to private parties for not exceeding 20 years.

Five Elections in Two Months

Oklahoma City, Okla.—There will be five elections in Oklahoma City in a period of two months, according to Bob Parman, City Clerk, and the total expense of the five elections will be approximately \$5,000, or \$1,000 each. The first will be February 14, when the voting taxpayers of the city will vote on the question of issuing bonds to the amount of \$1,500,000 for an improved water works system. The second election will be in March, to determine whether Oklahoma City shall have commission form of government or not. The next election will be the regular spring primaries, March 21, when both parties will select candidates for city offices. The fourth will be the regular city election about April 4, and on or about May 20 the charter election will occur. Should the charter carry and the people elect their commissioners in May the newly elected city officials will have served just about a week.

Uniform Accounting for Cities Urged

Providence, R. I.—The Commissioner of Industrial Statistics, in his annual report, recommends the passage of the following law in respect to a uniform system of municipal accounting:

The Commissioner of the Bureau of Industrial Statistics shall annually furnish to the auditor or other accounting officer of each city and town in the State blank forms or schedules, so arranged as to provide for uniform returns giving detailed statements of all receipts classified by sources and all payments classified by objects for its last fiscal year, a statement of the public debt showing the purpose for which each item of the debt was created and the provision made for the payment thereof, and a statement of assets and liabilities at the close of the fiscal year.

The commissioner may prescribe standard forms intended to promote the systematic accounting of financial transactions and the publication of the same in the city and town reports. The commissioner is also authorized to collect from the proper local authorities and to compile and publish such other information pertaining to municipal affairs as in his judgment may be of public interest; and it shall be the duty of all accounting and other officials and custodians of public moneys of cities and towns to fill out properly and return promptly to the said commissioner all schedules transmitted by him to them.

Bill to Protect Civil Service Employees

Albany, N. Y.—Final touches to a bill to extend to State, municipal and county civil service employees the same privileges which are at present enjoyed by veterans are being given by the New York State Competitive Civil Service Employees' Association. This association has been in conference with the civil service organization, covering the employees who are at work in State departments other than those at the capital, and who are holding positions in Greater New York, and an agreement has been reached whereby the forthcoming bill will be endorsed by both organizations, which have a joint membership of over 9,000 persons. The bill in question is expected shortly, and if passed will prohibit the removal of a civil service employee unless as the result of the sustaining of charges presented against such employee.

Grand Rapids' Proposed Charter

Grand Rapids, Mich.—The new Grand Rapids charter, as described by Robert L. Irwin, president of the Charter Commission, at a meeting of representatives of ten Michigan cities who recently met at Lansing to discuss charter reform and commission government, attracted much favorable comment. The government will be divided into administrative and legislative departments. The Council, composed of one man from each ward, will be purely legislative in its functions. The administrative branch will consist of a Mayor, who will be elected, and four chiefs of departments appointed by him. The four departments will be: Public Works; Health and Safety; Finance and Accounting; Parks and Public Property. A comptroller will be elected, who will be responsible for seeing that no fund is overdrawn.

Milwaukee's Socialistic Bills

Milwaukee, Wis.—The city government has sent to the Legislature 36 bills, covering measures which they would like to see enacted. Among those of most general interest are the following:

- To authorize the city to establish municipal slaughtering houses.
- To empower the city to purchase real estate and to construct and maintain dwellings to be sold or rented.
- To enable the city to secure and operate lodging houses.
- To permit the city to build and maintain lavatories and rent out the privileges.
- To authorize the city to establish a municipal loan bureau.
- To permit the city to purchase, lease or acquire or manufacture plumbing apparatus and do plumbing.
- To authorize the city to fix rates for wharfage and docks and collect charges.
- To provide for the exemption from taxation of village, town, city and county and school bonds.
- To enable the city to sell, convey, lease or otherwise dispose of any city-owned property.
- To authorize the city to borrow money to purchase park lands by cash payment, and to secure such loans by mortgage.
- To enable the city to raise the assessments from \$2.50 to \$3.50 a square yard for street improvements.
- To enable the city to exact a municipal license fee for automobiles.
- To make second offenses of violations of the automobile speed laws punishable by imprisonment.
- To amend the statutes to enable cities to charge license fees for street cars from time to time.
- To enable the city to grant franchises through parks and parked ways.
- To authorize the city to purchase plants and manufacture and sell ice.
- To permit the city to levy assessments for street oiling as well as sprinkling.
- To strike out the exclusive clause in the Milwaukee Gas Light Company franchise.
- To amend the charters of all cities to legalize compensation for special privileges.
- To provide for the forfeiture of street car franchises after two years of non-usage.

Proposed Charter for St. Louis Defeated

St. Louis, Mo.—The proposed charter for the city of St. Louis was defeated at a special election, January 31, by a majority of 40,155. The total vote was 89,937, of which 24,891 were for the charter and 65,046 against. About half of the total registered vote in the city was polled.

The proposed charter provided for a single legislative body, elected at large by all voters, civil service through the merit system and concentrating all executive and administrative power and responsibility in a few officers, answerable directly to the people. It called for a referendum on franchises and would enable the citizens to recall any elective officer after 18 months' trial. The charter would deprive the Mayor of the power to control 7,000 appointments.

Women Help Recall Seattle's Mayor

Seattle, Wash.—Mayor Hiram C. Gill, who was elected last March by a plurality of 3,500 votes, was recalled February 7 for alleged misconduct in office by a plurality estimated at 4,000. The votes of women, who were recently enfranchised in this State, were largely responsible for this result. The total vote was nearly 60,000 out of a registration of 71,000. Mayor Gill, elected for a term of two years, has been in office but little more than ten months. Women ruled absolutely in the election. It is the first time the women have had the privilege of the ballot in this State. The recall election was brought about in an attempt to oust Mayor Hiram C. Gill and to elect George W. Dilling. The women did not have the franchise when Gill was elected a little over a year ago, so that the shrewd politicians in the State, and in fact the whole Northwest, early recognized that the women held the deciding hand in to-day's election.

Bill Providing for Home Rule

Spokane, Wash.—The proposed statute which is intended to remove the last traces of doubt as to the legality of the new Spokane charter has been completed by Attorneys H. M. Stephens and J. T. Burcham. The new act is remarkable on account of its brevity. It repeals all laws relating to the form of organization of cities of the first class and gives them almost total power in drafting their basic law. The bill reads as follows:

An act relating to the form of organization of cities of the first class, and the exercise of the powers of such cities, declaring the applications of this act, repealing all laws or parts of laws inconsistent therewith, and declaring an emergency.

Section 1. The form of the organization and the manner and mode in which cities of the first class shall exercise the powers, functions and duties which are or may be given by law to such cities, with respect to their own government, shall be as provided in the charters thereof.

Section 2. Any such city may provide in its charter for the recall of elective officers and for direct legislation by the people upon any matter within the scope of such powers, functions or duties of any such city by the initiative and referendum.

Section 3. This act shall apply to any charter of any such city heretofore adopted or approved by the electors thereof at an election duly held.

Section 4. All laws or parts of laws inconsistent with this act are hereby repealed.

Section 5. An emergency exists and this act shall take effect immediately.

Chattanooga to Be Under Commission Government

Chattanooga, Tenn.—The Chattanooga commission charter bill has passed the Legislature and been signed by Governor Hooper.

Report on Finances of Rhode Island Cities

Providence, R. I.—According to the report of the Commissioner of Industrial Statistics on municipal finance the total current receipts for the 38 cities and towns of the State, including money received from loans and bonds, amounted to \$16,350,867.06. The current expenditures amounted to \$16,756,337.24. The cash on hand at the beginning of the year was \$1,307,918.70, and the cash on hand at the end of the year, \$932,448.52. The total property valuation of the 38 cities and towns amounted to \$536,544,943; \$406,801,270 of which was real and \$129,743,673 personal property. Real estate valuations in 1910 increased \$16,854,979 over those of 1909. Personal increased \$8,465,448.

Municipal Savings Bank Planned

Milwaukee, Wis.—A municipal savings department in connection with the City Treasury may be established in Milwaukee if a bill which was introduced in the State Legislature by Assemblyman Max Binner, Milwaukee, is enacted into law. The plan is to discourage the practice of paying interest money on bonds to Eastern firms and to keep all municipal bonds in Milwaukee. If the law is passed the City Treasury will be placed under the jurisdiction of the State Bank Examiner, who will hold the city bonds as security for deposits made with the City Treasurer in the form of savings accounts. All people who care to open a savings account will be enabled to make deposits from \$5 to \$1,000 and to receive interest from the city. The rate probably will be 3 per cent. The depositors will have the same security as a bank, as the city will stand behind the accounts with the bonds. The entire savings are not to exceed the amount of bonds on deposit with the State.

Cincinnati Mayor Vetoes New Code

Cincinnati, O.—Deeming the increases in the salaries of city employees unnecessary and inadvisable in view of the limited tax rate and objecting to the elimination of the provisions of the old lighting ordinance, which compel electric lighting companies to permit other such companies to use its poles at a fair rental, Mayor Schwab has vetoed the new codification of city ordinances recently passed by council. Mayor Schwab has more than once of late declared his belief that the city soon would find itself hampered for funds to run the departments under the present tax limit, and in the event that Governor Harmon's ten-mill limit is passed by the legislature the question would become a serious one. The salary increases provided in the code amounted to over \$70,000 a year in the aggregate and affected many of the heads and chiefs of the principal subdepartments.

Ask Change in City Salaries

Cleveland, O.—Believing that the salaries of city employees need adjustment, a meeting was held last week at the office of the Civil Service Commission to outline a plan for bringing about the change. Representatives of the Chamber of Commerce joined in the conference.

Commission Government Elections

Pontiac, Mich.—Commission government was adopted January 30 by a vote of 824 to 494. Only about half the normal vote was polled.

Guthrie, Okla.—Commission government was adopted January 30 by a unanimous vote.

Jacksonville, Ill.—By a vote of 1,471 for to 837 against Jacksonville adopted the commission form of municipal government January 31. The total vote was about 75 per cent of the vote cast at the last city election.

STREET CLEANING AND REFUSE DISPOSAL

Cities Having Cleanest Streets

Albany, N. Y.—Albany, Poughkeepsie and Newark, N. J., according to a statement made by Gus H. Hanna, of Cleveland, Ohio, have the cleanest streets of the hundred cities which he has visited in the past few months. Mr. Hanna was superintendent of the Street Cleaning Department of Cleveland during the administrations of Tom L. Johnson, and transformed that city from one of the dirtiest to one of the cleanest in the country. He is now sales agent for the Tiffin Wagon Works and is introducing their street-flushing machines.

Clean-up Day for Lodi

Lodi, Cal.—At a near date "Clean-up Day" will be carried out by the Women's Improvement Club of Lodi. Scores of boys will be paid to pick up tin cans and other rubbish in the residential sections. A number of citizens have offered to donate the services of their teams to haul the debris away, and the general public is with the club in the progressive movement. On this day the club will have neglected palms and trees trimmed and mudholes in sidewalks filled. The surplus gravel which the city has on hand will be used at street crossings which have worn low.

Street Sweepers Organize

Pittsburg, Pa.—The 800 street sweepers of Pittsburg have organized. Their union is to be known as the Street Sweepers' Union No. 13,123, with headquarters at Union Labor Temple. The following officers have been elected to serve for the present year: President, Patrick Murphy; vice-president, William Robinson; secretary, George Haney; recording secretary, William H. Murray; treasurer, Joseph Waters.

Dr. Paul Franklin, chairman of the Finance Committee of Council, has asked Council to increase the street sweepers' wages from \$2 per day to \$2.25. It is contended that in other cities street sweepers are paid \$2.50 and \$3. Many of the street sweepers in this city get only three days' work out of the week, and say they are unable to support their families on this meager earning.

Using Flushing Machines in Winter

Albany, N. Y.—According to Mayor McEwan, Albany streets were cleaned for the first time this year in the middle of the winter. The occasion was a spell of warm weather. The flushing machines were called out and did effective work.

RAPID TRANSIT

Chicago Subway Plans About Ready

Chicago, Ill.—Plans are near completion by Bion J. Arnold which will give the city the most elaborate subway systems in the world. No authorized statement of details has been given out by Mr. Arnold, but he is quoted as saying: "I will say that I am in favor of a 'double decker' subway. The bottom of the subway, as I plan it, will be on two levels, so there will be no grade crossings below the ground. My plans are exceptionally comprehensive. They are prepared in such a way that the city can do exactly as it chooses in the matter of construction. If the city wishes to build itself my plans provide for that; if it wishes the traction companies to build my plans also contemplate that." Details to the effect that the bottom of the subway is to be forty feet below the street level, to extend from building line to building line rather than from curb to curb, and similar minutiae Mr. Arnold characterized as "guesswork." He intimated that certain details mentioned may be approximately correct, but stated that his plans are not ready for publicity as yet.

Railways Compelled to Pay for Culverts

Pasadena, Cal.—City Attorney William Carr has given an opinion to Council to the effect that street railroads should pay the entire cost of constructing culverts under their rights of way when the necessity for their construction depends upon the occupancy of the street by the railway. It is said that in the past the city has paid out many thousand dollars for the construction of culverts which should have been built at the expense of the street railway.

MISCELLANEOUS

Council Favors Home Union Labor

Cincinnati, O.—Council committee on track elevation has gone on record as favoring the employment of home labor at union wages in the construction of the grade crossing viaducts for which a recent bond issue provides. The committee directed Legal Clerk Buchwalter to incorporate the requirement as part of the enabling ordinance and specifications of the Ludlow avenue crossing viaduct.

Anti-Lunch Cart Agitation Started

Lynn, Mass.—Providing he has the support of the other members of the Municipal Council, Commissioner Bayrd intends to put every lunch cart within the fire limits of the city of Lynn out of commission. He started on this crusade by causing N. K. Hamel, who wanted to transfer a lunch cart from one location to another on Exchange street, to be given leave to withdraw. Not only does he intend that licenses shall be withheld from new petitioners but that as those lunch cart owners who have been enjoying this privilege for years come before the Municipal Council for the renewal of their licenses they will also be told to fold up and go out of business. Mr. Bayrd's point is that too much valuable land in the central part of the city is not serving its proper purpose. He asserts that the owners of this class of property ought to receive more stimulus to erect taxable buildings on the sites and thus provide a greater source of revenue for the city. From an esthetic standpoint also, Mr. Bayrd claims that the lunch carts are objectionable. He has the same feeling concerning billboards, against the erection of any more of which he proposes to interpose objections.

Start Municipal Vaudeville

Milwaukee, Wis.—Not satisfied with giving a weekly municipal Sunday afternoon concert in the city auditorium, at which a high-priced orchestra discourses classical music and ragtime melodies alternately, the Socialist administration has decided to inaugurate a series of Sunday afternoon professional vaudeville entertainments. The Socialists believe they have a better chance of making the vaudeville affair a success than they have with the concerts. The concerts are losing \$100 each. The vaudeville may meet opposition from the Theatrical Trust. Only a small admission fee will be charged.

Southern Cities Would Segregate Races

Baltimore, Md.—City Councilman Samuel L. West, on hearing the Court's decision against his segregation ordinance, said that he would immediately make plans for the introduction of a new segregation ordinance "that will hold water." "We have been shown the way in the trial of these test cases," he said, "and instead of being discouraged I feel much encouraged over the prospect of having adopted an ordinance that will meet the situation in every respect. With this object in view, I shall consult with the best constitutional lawyers in the city in a day or so, and we will draft an ordinance that will overcome the defects which, as the Court pointed out, prevail in the first ordinance." In all probability Mr. West will have incorporated in the new ordinance the provisions he had intended as an amendment to the present ordinance covering the cases of the mixed streets, leaving it discretionary with the residents in the mixed streets to decide whether or not a white man or a negro can occupy a vacant house, and the provisions of the ordinance will not affect such a street.

Birmingham, Ala.—Alderman George Huddleston's bill providing for segregation of the races has been approved by City Attorney Romaine. The bill provides that a negro shall be guilty of a misdemeanor and punished by a fine not exceeding \$100 and imprisonment of six months, one or both, if he shall hereafter move into or take up his residence in premises not now occupied by persons of the negro race, in any block in which the majority of persons then therein residing are of the white race, such residence being within 400 feet of the residence of any white persons, providing, however, that domestic servants residing on the premises of their employers shall be excepted from the provisions of the ordinance. It also provides the same punishment for any white person who shall move within 400 feet of a negro residence.

Richmond, Va.—The city of Richmond is to enact a color-line residential ordinance, which will be as rigid as the Baltimore ordinance. The demand for the law is due to the advance of negroes into what has for years been the center of the residential section for the whites. The result of this has been to reduce the value of the property to less than half its former value, causing losses to the owners. The ordinance will prohibit any white person from occupying any house on any block where the majority of the residents are colored people, and likewise the colored population is prohibited from moving into any premises on a block where the majority are white residents.

Art and Economy in Civic Beauty

Toledo, O.—Toledo has an opportunity for a civic center surpassed by no other city in America, and the same may be said of the possibilities of beautifying her water front. Toledo's civic center must be not only American, but suitable to the needs of Toledo. Civic art is an asset to any city. With fine parks included, it builds up the health of a city, and this is a greater asset. In the building of a city it is a crime not to plan for the future. A scheme for the future means economy."

These were some of the thoughts advanced by Arnold W. Brunner, federal architect, of New York, before a representative body of business men and citizens in Memorial Hall Annex. Mr. Brunner spoke informally for half an hour, and then devoted the rest of his time to a display of stereopticon views dealing mainly with the civic plans of European cities, including Paris, Dresden, Vienna, Hamburg, Berlin and London, with just a glimpse of the architecture of old Toledo in Spain, and two or three views of Rome. His American views were limited to Cleveland's group plan, a similar plan of Baltimore and the beauties already existing and those planned in Washington. In all of these Mr. Brunner sought to show that the most beautiful and costly buildings would lose their value unless given the proper setting. Mr. Brunner pleaded for many small parks, showing how they not only added to the value of surrounding property, but contributed to the health and happiness of the community, and he showed how railroads could be brought into a city in a dignified way without hurting their business in the least. This he illustrated with views of European railways running directly through beautiful gardens.

Little Money for Parks This Year

Milwaukee, Wis.—The task of carrying out \$89,520 in improvements with but \$27,819 available, which amount may be reduced to \$15,819.90 when all parks and playgrounds are placed under the jurisdiction of the park board by the Common Council, is the problem confronting that board as announced when the tentative budget and 1911 improvement plan was submitted. While there is no hope of carrying out much improvement work this year with the limited funds on hand an attempt will be made to reach a plan whereby the present year will show some progress in the park and recreation activity of the city. The reason the park board will be able to make but few improvements in 1911 is the action of the Council in forcing the board to pay \$15,712.98 for water in 1909; the probable payment of \$16,708 for water used in 1910 and the possible expenditure of \$12,000 when 14 smaller parks and playgrounds are taken from the control of the Department of Public Works and placed under the jurisdiction of the park board.

Ask for Compulsory Spraying Law

Columbus, O.—J. W. Rodgers, former park superintendent of Cincinnati, is in Columbus to urge the enactment of a law for compulsory spraying of ornamental and fruit trees. He conferred with officials of the State Board of Agriculture and Governor Harmon, and they approved of the idea. He will appear before the House and Senate agricultural committees to push the proposition. Mr. Rodgers says that the spraying process is the only salvation of the trees.

"Most of the trees in cities are weakened by the sulphurous fumes, and are so badly devitalized by the pests which attack them that they do not recover," said Mr. Rodgers. "The trees are the greatest assets of the land and by spraying them they can be preserved. Spraying should be compulsory and the law should be so that if citizens do not spray this could be done at a small expense by the State. People do not spray because they know so little about it."

Lid Is on in Tacoma

Tacoma, Wash.—Henceforth Tacoma will be a "closed town" in all that the phrase implies. The municipal commission at its last session unanimously adopted a resolution instructing the police department to suppress all prize fights, gambling, the sale of liquor in any place without city license and enforce the operation of a restricted district. Commissioner L. W. Roys of the Department of Public Safety announced that he would obey the resolution to the letter.

Can't Agree on Sharing Expense

Paterson, N. J.—At a conference between the members of the Board of Trade committee on grade crossing elimination and the members of the Boards of Finance and Public Works it developed that the Mayor and the Board of Finance, while favoring the elimination of grade crossings, are not willing to enter into any arrangement by which the city is to pay part of the cost of the work. This means that there is no immediate likelihood of the elimination of grade crossings in this city, unless the railroad companies decide that they are willing to do the work at their own expense, or unless there is legislation that will compel them to eliminate their grade crossings in cities on some basis as to cost to be fixed by the Legislature. General S. V. S. Muzzy was spokesman at the conference for the Board of Trade committee. He stated that the Erie had agreed to eliminate the crossings along its lines in this city, according to plans submitted, which it was estimated would cost \$1,200,000, provided the city would agree to pay one-third of the cost, the Erie to pay two-thirds. In addition to this the Erie wanted the city to negotiate the sale of the necessary bonds for the work.

To Muffle Motor Boat Noise

St. Augustine, Fla.—Alderman Usina has proposed the drafting and passage of an ordinance requiring all launch owners to use mufflers on their boats, while plying the Matanzas river in front of the city. This action was brought about on account of numerous complaints received from residents and owners of property along the bay front of the noises caused by launches, especially at night.

Contractors Ask Interest on Certified Checks.

Spokane, Wash.—Eslick & Hartnett, contractors, have made a demand on the city for \$91.70 interest on a certified check for \$16,500 which accompanied their bid on the Lincoln Heights reservoir, and which has not been returned by the Board of Public Works. This is the first claim of the kind ever presented to the city. The contractors claim that the Board has no right to hold certified checks which accompany bids without paying interest on them, and have signified their intention of suing the city if their claim is not allowed. The Board of Public Works has been in the habit of receiving bids and delaying sometimes for months the awarding of the contract, retaining the checks for that length of time. If these contractors are successful it may mean that the Board will have in the future to either throw out all bids or award a contract immediately to save interest on the checks accompanying bids. The Board sometimes has as much as \$100,000 in certified checks on its hands.

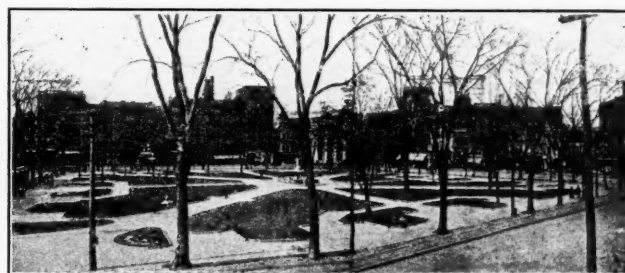
Transformation of Public Square

Wilkes-Barre, Pa.—About a year ago the Public Square was vacated by the County Commissioners, the old Court House removed and the ground reverted to the city. In planning the improvements to the grounds two factors had



PUBLIC SQUARE BEFORE REMODELING. OLD COURT HOUSE OBSTRUCTING PEDESTRIANS

to be considered, the preservation of the trees and the use of the park as a thoroughfare for the public. The work was completed just before winter set in. Within the limits of the park are 25,852 square feet of granolithic work. The footwalks around the park contain 4,994 square feet. The coloring of the walks, which is grayish brown, has been



PUBLIC SQUARE IMPROVED WITH CEMENT WALKS, COURT HOUSE REMOVED—TREES PRESERVED

the subject of much favorable comment. The work was done by Zeiser Bros. The plans and specifications were drawn by the Sturdevant Engineering Company.

Wilmington to Have Chief Forester

Wilmington, Del.—A bill which provides for the appointment of a chief forester and as many assistants as are deemed necessary, by the Street and Sewer Board, has been drafted by the municipal committee of the Board of Trade and is now ready for presentation to the Legislature. The proposed bill gives the Street and Sewer Department authority over all trees and tree planting in the streets, highways, lanes, alleys, parks or other public property of the city, and also specifies that the department is to have all authority over their care, removal, spraying and whatever else might be considered necessary for the care of the trees. The bill provides for a chief forester, to be appointed by the Street and Sewer Directors, who must be an expert in the work of training and culturing trees.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Illegal Ordinance—Refusal of Mayor to Sign

State ex rel. Case vs. Wilson et al.—The mayor of a city of the fourth class properly refused to sign an ordinance providing for a depository for the general funds of the city, where such depository had not been provided for by statute, so that his removal from office therefore was illegal, under the city charter providing that he cannot be removed by the council without cause.—Springfield Court of Appeals, 132 S. W. R., 625.

Limits of Indebtedness—Determination

Ex parte City of Newport.—Constitution limits the maximum indebtedness of cities of the first, second, and third class having a population exceeding 15,000 to 10 per cent of the value of their taxable property, to be estimated by the assessment next before the last assessment prior to the incurring of the indebtedness, provided that nothing shall prevent the issue of renewal bonds and bonds to refund the floating indebtedness of a city, etc. Held, that where a city included an independent school district, which was an independent corporation, the indebtedness of the school district was not to be treated as a part of the city's indebtedness in determining whether the city had reached its maximum constitutional debt limit, so as to preclude the issuance of further bonds.—Court of Appeals of Kentucky, 132 W. R., 580.

Paving Contract—Rock Excavation—Extra Work

Dunn vs. City of New York.—Plaintiff contracted with a city to pave certain streets, the contractor to excavate the subsoil to a specified depth, and if rock should be encountered, it was to be removed for at least 3 inches deeper. Several years before, the city had let contracts for grading the streets in question under which all rock was to be excavated to a depth of two feet below the curb line and the excavation then refilled with soft filling to the street level. Under such previous contracts, the contractors had received payment in full upon proper certificates that the work had been fully performed. Such contracts were on file as public records with the certificates showing the full performance of the work and payments therefor. When plaintiff undertook to excavate the streets, he found that the rock had, in fact, been removed to a depth of only about a foot below the curb instead of two feet and was required, over his protest, to remove the rock which should have been removed under the former contracts. Held, that the parties to the contract did not contemplate that the contractor would have to remove the rock which was supposedly removed under the former contracts, and the contractor being compelled to make such excavation to perform his contract, there could be a recovery therefor as for additional work.—New York Supreme Court, 126 N. Y. S., 61.

Defects in Streets—Evidence

Willard vs. City of Detroit.—In an action against a city for personal injuries received through an alleged defect in the sidewalk along the street, evidence held sufficient to go to the jury, on the question of plaintiff's contributory negligence.—Supreme Court of Michigan, 129 N. W. R., 32.

Care of Sidewalks—Delegation to Individuals

Severa vs. Village of Battle Creek.—A municipal corporation cannot delegate the construction and care of its sidewalks to a private individual or corporation and thereby evade its responsibility for such care and supervision and thus escape liability for any damage resulting from the failure of the person or corporation, to whom such care and supervision are delegated, to use that reasonable care and diligence to keep such sidewalks in a reasonably safe condition for travel which devolve primarily upon the municipal corporation itself.—Supreme Court of Nebraska, 129 N. W. R., 186.

Injury from Broken Electric Wire—Evidence

Johnson vs. Bay City.—In an action for personal injuries sustained by a child of about five years of age, as a result of contact with a broken electric wire hanging from a pole, constructed and maintained by defendant, and in which several theories of the cause of the broken wire were submitted to the jury, evidence held sufficient to sustain a verdict holding defendant liable.—Supreme Court of Michigan, 129 N. W. R., 29.

Polluted Water Supply—Liability

Keever vs. City of Mankato, Flanagan vs. Same.—A complaint charged that defendant city negligently allowed the supply in its water works system to become polluted with poisonous substances, and large quantities of filth and sewage to escape into and saturate its water supply, by reason whereof plaintiffs' intestates contracted typhoid fever and died as a consequence. On demurrer it is held:

(1) The municipality was liable for its negligence in its private or corporate capacity, and was not exempt because it was carrying out a governmental function.

(2) Under section 4503, Rev. Laws 1905, an administrator of a person whose death was due to the wrongful act of a municipality may maintain an action for damages consequent thereon.—Supreme Court of Minnesota, 129 N. W. R., 158.

Water Works Contract—Validity

Savage vs. City of Tacoma.—A prior judgment in a suit to restrain a city and a contractor from proceeding with a contract made under an ordinance of the city for extension of a water works system on the ground of invalidity of the contract, which sustained its validity, is no bar to a later action by the contractor against the city for damages for breach of the contract, in which the city alleges the invalidity of the ordinance under which the contract was made.—Supreme Court of Washington, 112 P. R., 78.

Sewers—Overflow—City's Liability

Hayes vs. City of Vancouver.—A city, having permitted a sewer to become obstructed, attempted to remove the obstruction by turning a large and powerful stream of water into the sewer. The water did not flow through, but stopped at the obstruction, backed up into and overflowed water-closet connections in the basement of a building in which plaintiff had stored a large quantity of goods, resulting in injury thereto. The city's representatives were warned beforehand of the probable damages that would result from such act. Held, that the city in such operations did not act in a governmental capacity and was liable for the injuries sustained.—Supreme Court of Washington, 112 P. R., 498.

Street Paving—Liability for Intersections

O'Leary vs. City of Glens Falls.—Where a village, empowered by village law to apportion, between itself and the landowners, the cost of paving a street, assumed half the expense of paving the entire street, its half being in excess of the cost of paving street intersections, which such section prohibits being imposed on the landowners, should be deducted from the total cost of paving the street, and the balance should be assessed pro rata on the lands of the abutting owners according to the feet frontage of their respective lots.—Court of Appeals of New York, 93 N. E. R., 513.

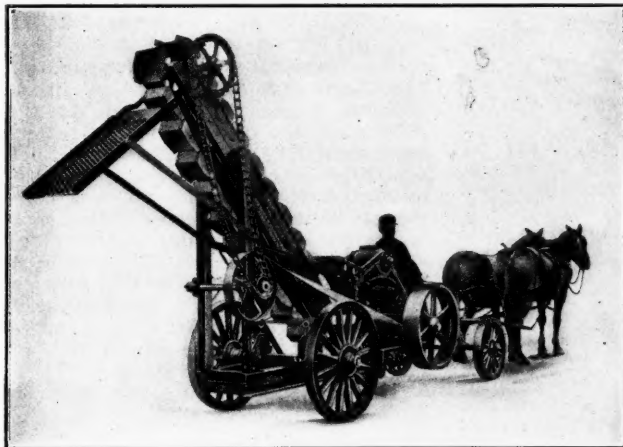
Transfers—Duty to Grant

City of Shreveport vs. Shreveport Traction Company.—It cannot be deduced, from the adjudged cases or from any other premise, that in the case of a contract with a municipality, which, though authorized or evidenced by an ordinance, involves mere conventional obligations, and does not involve the exercise by the municipality of its law-making power, a subcontractor can be held to have assumed the obligations of the contractor. The obligation to grant universal transfers could be imposed on a street railway company by the city of Shreveport only as a matter of contract; and as the defendant has not, either expressly or impliedly, given its consent to such contract, it cannot be compelled to grant the transfers.—Supreme Court of Louisiana, 53 S. R., 863.

MUNICIPAL APPLIANCES

Portable Crushing Plants

The illustration of a Champion portable crushing outfit made by the American Road Machine Company, Kennett Square, Pa., suggests to the contractor or municipality doing its own work a good way of starting out the road building season, now almost upon us.



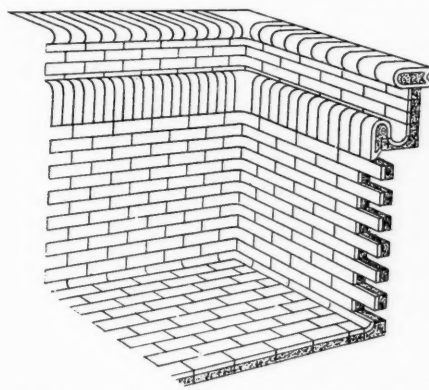
PORTABLE CRUSHING PLANT

The Champion mounted crushing outfit is moved on the road exactly as shown in the illustration, without taking down either elevator or screen. The machine can be operated just as it stands by blocking the wheels, these being made particularly heavy and strong for that purpose. A better plan, however, because it affords a more solid foundation, is to place two wood sills, which should be kept with the outfit, under the I-beam sills to which the crusher is attached. The rear end of the machine is then lowered by simply turning two screws with a straight iron rod attached to screws for that purpose until the I-beam sills rest on the wood sills; the front end of the machine is then lowered by removing the front trucks, the whole operation requiring but very little time.

When the crushing is finished and it is desired to move the machine, the operation is reversed, and the plant is again on the road.

Glass Brick for Swimming Pools

A glass-faced brick with filling of concrete which is suitable for use in the construction of swimming pools, for the walls of garbage crematories, fire engine houses and lining of tunnels and



SWIMMING POOL OF GLASS BRICK, SHOWING SCUM GUTTER

subways is made by the National Glass Brick Company, Connellsville, Pa. The use of these brick in a swimming pool is shown in the illustration. The ease with which special shapes are made aids materially in the design of the scum gutters. Fresh water in a swimming pool is let in from the bottom and the overflow is all round the basin at the top. The glass surface and close joints between the brick make the washing down process easy.

The construction of the brick is as follows: To a glass facing $\frac{1}{4}$ inch thick at its thinnest part is attached a well-proportioned concrete back. The concrete backing is attached to the glass front by three separate means, each entirely sufficient to secure the union of the two materials: (1) The cement of the concrete adheres to the glass. (2) Both ends of the glass face are returned by greater than a right angle, thus imprisoning the concrete mass. (3) A dove-tailed rib of glass traverses the entire length of the back of the facing, at once strengthening the glass face and also securing it to the concrete body. The glass face is 1.16 of an inch larger all around than the concrete body, thus



GLASS FACED BRICK—CONCRETE BACKING

making possible a good mortar bond, notwithstanding that the mortar between the faces of the glass may be nearly entirely pressed out. The glass-faced brick is laid in exactly the same way as any finished brick. They are bonded to the wall, being faced in like manner also. A wise plan is to lay up four courses of two-inch depth brick and then one of four-inch depth. This will be an effective binder and preserve the symmetry of the courses exposed to view. All colors of which glass is capable can be produced in glass brick. White, however, is standard stock.

Willson Flare Light

The Willson Flare Light, manufactured by the International Marine Signal Company, Limited, No. 172 Broadway, New York, is an acetylene light specially adapted for use in all kinds of construction work. The light is brilliant and the cost is low. The candlepower is 8,000 and the cost of operation 5 cents an hour. The light is steady and wind does not extinguish it. The weight of the No. 1 light, shown in the illustration, is 95 pounds; it contains a carbide charge of 18 pounds and 112 pounds of water, making the total weight charged 225 pounds. A smaller

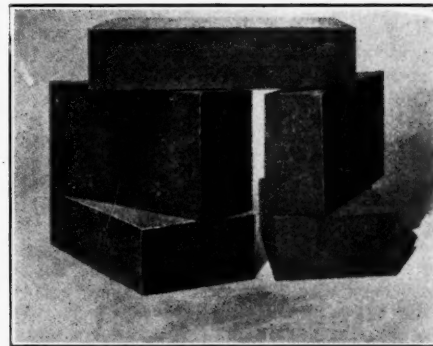
size has a candlepower of 1,000, weighs 225 pounds charged and is estimated to cost 2 cents per hour to operate. By



the use of a flexible hose an extension light may be obtained which can be put in places where it is impossible to locate the generator.

Cork Brick

Cork brick are recommended for the barn floors of sanitary dairies and for stall floors of fire houses by the manufacturers, the Armstrong Cork Company, Pittsburg, Pa. The brick consist of finely granulated cork and a special grade of tough asphalt, heated and thoroughly mixed, then molded into pressure into brick form. The bricks measure 9 by 4 by 2 inches and are laid flat so that four will cover one square foot of surface. The brick is the result of a number of years' efforts in selecting the best bitumen. The merits of the brick for use in sanitary dairies are that they are non-absorbent, easy to clean, are never uncomfortably cold for animals to stand or lie on, are



SAMPLES OF CORK BRICKS

easy on the feet, give a sure foothold and have long life in service.

The blocks are laid on any firm foundation, concrete, broken stone or wood, and are set in Portland cement mortar, in a thin layer of hot asphalt or pitch or in a bed of sand.

NEWS OF THE SOCIETIES

American Institute of Consulting Engineers.—An amended constitution was adopted at the annual meeting, January 17, at the Engineers' Club, New York City. The objects of the institute are stated to be the promotion of ethical standards and practical efficiency in all branches of engineering as a profession. The institution will not deal with technical papers and discussions, but with matters affecting the status of the engineer as a professional man, as legislation affecting practice of engineering, rules of professional conduct and standard charges for engineering service. The officers for the coming year are Alfred P. Boller, president; Gustav Lindenthal, vice-president; E. W. Stern, 103 Park avenue, New York, secretary and treasurer. Committees on legislation were appointed as follows: Gen. J. A. Bingham, S. O. Miller and S. Whinery; on professional practice and ethics: John F. Wallace, H. W. Hodge, F. A. Molitor, L. B. Stillwell, George F. Swain, W. J. Wilgus.

Western Society of Engineers.—At a meeting, Chicago, February 1, a paper on the "Public and the Public Service Corporation" was presented by John M. Ewen and A. Bement. At a meeting of the Hydraulic, Sanitary and Municipal Section, January 30, C. D. Hill presented a paper on the "Sewage System of Chicago." Langdon Pearse read a paper on the "Sewage Disposal Problem."

Municipal Engineers of the City of New York.—The following officers were elected, January 25: President, Henry W. Vogel; vice-presidents, Sidney W. Hoag, Jr., and Frederick C. Noble; secretary, C. D. Pollock; treasurer, Herman K. Endemann; directors, A. L. Schaeffer, E. M. Law, Jr., D. L. Turner, E. A. Miller and E. J. Fort.

Engineers Club of Philadelphia.—The club has elected the following officers for the coming year: President, James Christie; vice-president, W. L. Plack; secretary, W. Purves Taylor; treasurer, F. H. Stier.

International Municipal Congress and Exposition.—Definite plans for the international municipal congress and exposition to be held in Chicago from September 18 to September 30 of this year were announced by the Chicago Association of Commerce, upon the return of John MacVicar, commissioner-general of the affair, from a tour of observation and arrangement in the Eastern cities.

"Two distinct features—the congress and the exposition—will mark the event," explained H. F. Miller, business manager of the Chicago Association of Commerce. "Municipal exhibitions will be opened to the public inspection while the congress is in session. Delegates from cities all over the world will be present. Public bath, playgrounds, park systems and city plans generally will be shown at the exhibition, together with appliances made by manufacturers for sale to municipalities. Much of the space allotted to the latter has already been spoken for by the manufacturers."

The show will be held in the Coliseum, the First Regiment Armory and in some vacant lot already rented by the Chicago Association of Commerce, under whose auspices the event is to be held. The congress will be held in the Coliseum annex or wherever the committee on arrangement can find sufficient space.

County Road Engineers of West Virginia.—At the second convention of the organization, which ended January 28, at Charleston, the following resolution was adopted:

Be it Resolved, By the County Road Engineers' Society of West Virginia, here assembled, that after more than one year's experience with the new road laws, as enacted by the last Legislature, we express to the present Legislature our recognition of the superiority of the present laws over the old laws and approval of the present laws, in general, and recommend to the Honorable Legislature the amendments to said laws, as suggested by the Commissioner of Public Roads in his report.

The officers for the coming year are W. J. Alexander, of Wetzel County, president; Robert D. Hennen, of Monongalia County, vice-president, and Henry A. Gentry, of Fayette County, secretary-treasurer.

Virginia Peninsula Good Roads Association.—The meeting on January 24, which resulted in the formation of the association, was the largest, most representative and most enthusiastic gathering ever held on the peninsula in the interests of good roads. That a sand-clay highway along the peninsula from Newport News to Richmond will be built—and built before the coming Summer is over—seemed to be a certainty at the conclusion of the enthusiastic good roads rally held in the historic old court house. And while the new road is under construction a definite movement will be started looking to the establishment of an adequate ferry service across Hampton Roads to connect the Peninsula pike with the Jamestown boulevard between Sewall's Point and Norfolk. This organization begins its existence with a charter membership of about sixty, including representatives from Richmond, Williamsburg, Newport News, Hampton, Old Point, Norfolk and all of the counties of the peninsula, and has as its avowed object the construction of the Richmond-Newport News highway. The officers are as follows: President, F. W. Darling, Hampton; first vice-president, Henry T. Wood, president of the Richmond Chamber of Commerce; second vice-president, H. B. Goodridge, Norfolk; third vice-president, J. B. C. Spencer, Williamsburg; secretary, W. E. Cottrell, secretary of the Newport News Chamber of Commerce; treasurer, George F. Adams, Old Point Comfort.

League of Utah Municipalities.—At the annual meeting of the league in the city hall at Sandy, Utah, in January, the following resolutions were adopted:

Whereas, It now appears from bills introduced in the Legislature that there is a possibility of a law being enacted which will prohibit towns from granting liquor licenses and thus deprive them of a source of revenue heretofore obtainable; and

Whereas, The law now limits the power of taxation to two and one-half mills unless authorized by a vote of the people at a special election, in which event the tax levy shall not exceed five mills; and

Whereas, The revenue derived from such tax levy is insufficient to meet the necessary expenses incident to the indebtedness of a town corporation; therefore be it

Resolved, That we favor that in the pending legislation upon the liquor question there shall be no distinction in the powers and privileges to cities of any class and those granted to towns; and be it further

Resolved, Because of the insufficiency of the revenue derived by towns because of the small rate of tax levy as now prescribed by law, and the necessity being apparent for the authority to levy a higher rate of tax, that we favor an amendment to the present town charter empowering towns to levy a tax to the amount of one per cent of all assessable property within the town; and that upon a majority vote of the qualified taxpayers at a special election called to vote upon the question, the authority be conferred to levy an additional tax not to exceed five mills, or one-half of one per cent.

Among the speakers were James H. Anderson, "Good, Cheap and Economical Roadway;" Dr. A. N. Hanson, "Sanitation and Public Health;" Joseph Ulmer, "Sewage and Sewage Disposition;" G. W. Goats, "Water Systems;" W. W. Wilson, "Sprinkling of Roads;" H. C. Maughan, "Municipal Lighting." Salina was selected as the 1912 meeting place and the following officers were elected: Mayor H. F. Jorgenson, Salina, president; W. D. Kuhre, Sandy, first vice-president; Mayor P. Bentz, Murray, second vice-president, and Mayor Heber Christensen, of Richfield, third vice-president.

The American Society for Testing Materials.—Announcement is made concerning the letter ballot on the manner of the organization of technical committees of the American Society for Testing Materials. The proposal that the chairman of such committees should be selected from representatives of consuming interests and unattached experts was carried by a vote of 189 to 67. The minority favored no restriction on this matter, so that producers as well as consumers and unattached experts might be eligible to committee chairmanships.

There has been some sentiment in favor of holding the annual meeting of the society at a farther Western point, but it was decided not to change this year, and the annual meeting will therefore be held at Atlantic City in the last week of June, 1911. As far as possible papers and committee reports will be printed in advance of the meeting. One of the features of the program already scheduled is a symposium on hardness tests.

Preparations will soon be started for the Sixth Congress of the International Association for Testing Materials which will be held in New York in 1912. A nucleus for the Committee on Organization has been constituted in the Executive Committee of the American Society and the officers of its standing committees. They will hold their first meeting in New York in February. The American membership in the International Association is now 450, out of a total membership in the American Society of 1,325. It is expected that the American representation will be very considerably increased before next year.

New England Street Cleaning Conference.—The second annual meeting will be held in Springfield, Mass., during the second week in May. Among those who are to speak are Le Grand Powers, Chief Statistician, Census Bureau, Washington; Dr. Soper, President Metropolitan Sewerage Commission, New York; Edward T. Hartman, Boston, Secretary, Massachusetts Civic League, and Prof. Carl Aronovici, Bonn University, Providence, R. I. The subjects to be considered will include the following: "The Relation of Pavement to Street Cleaning," "Proper Sanitary Regulations for Refuse Disposal," "Accounting in Street Cleaning Work," "The Relation Between Street Cleaning and Other City Departments," "The City Slums and Clean Streets," "Dust Particles in the Air as Related to Street Pavements," "Efficiency of the Street Patrol System," and "Labor Questions in Street Cleaning Work." The conference will be open to the public, and in the evening there is to be an illustrated lecture by City Engineer F. L. Ford, of this city, on "Municipal Improvements in European Cities."

International Association of Chiefs of Police.—The president of the body has sent out the following call: "Beginning June 11, 1911, the International Police Association will hold its eighteenth annual convention in Rochester, N. Y., to continue five days. This association includes in its membership nearly 300 heads of police forces of the United States and Canada, and its aims and purposes are to elevate the standard of the police institutions generally, to improve the status of the police officer, to insure co-operation among the police organizations of the world, to make generally effective the modes of criminal identification, to secure expeditious action on the part of the police generally, to devise reciprocity proceedings and to introduce modern facilities in the conduct of the service everywhere. Interchange of opinions, presentation of existing conditions, reading of police papers and discussions following the same have all proved valuable heretofore, and it is proposed to extend the good work by enlisting commissioners of police, chiefs of police, superintendents of police and high constables to attend this convention."

"You, or a representative of your department, are most earnestly and respectfully invited to attend, and if you cannot do so to prepare and forward to the president of the association such views as you may be inclined to impart for the good of all on any topic of furtherance of the police work of the world. The principles of this organization, as set forth by its presiding officers, are to secure a closer official and personal relationship among police officials at home and abroad; to secure unity of action in police matters; to elevate the standard of police institutions by urging the elimination of politics from their conduct; a tenure of office for those employed in the service; the maintenance of honorable men and means in the transaction of police business; the general adoption of pension and relief laws; the adoption of humane efforts in the enforcement of laws; the provision of temporary relief for its worthy members and their families in certain emergencies; the advancement along all lines pertaining to the prevention and detection of crime and the identification and treatment of prisoners."

Connecticut Society of Civil Engineers.—The 27th annual meeting will be held at New London, Conn., Feb. 14-15. Papers to be presented are as follows: Feb. 14—"The Catskill Water Works for New York," Alfred D. Flinn, Department Engineer, New York Board of Water Supply; "Some Features of Baltimore's \$10,000,000 Sewerage System," H. M. Knight, formerly Engineer with the Baltimore Sewerage Commission; "The Congress Street Bridge," R. F. Stoddard. Feb. 15—"Testing Water Wheels After Installation," Prof. Charles M. Allen, Worcester Polytechnic Institute; "The Relation of Weather and Forestation to Stream Flow," W. L. Moore, Chief of U. S. Weather Bureau; "Actual Yield of a Typical Connecticut Watershed," R. A. Cairns, City Engineer of Waterbury, Conn.

International Association of Fire Engineers.—Secretary James McFall has issued the following notice: Every fire chief is invited to meet with us in Milwaukee. This will be the most interesting meeting for a fire chief. Many subjects of interest to the fire service will be discussed. Much apparatus will be on exhibition, the latest both in auto

and horse drawn will be there. Can the secretary help you in interesting your officials in having them authorize your attending this meeting and making an appropriation covering your expenses? If so, say the word; give me their names for we want to see you in Milwaukee.

Carolina Municipal Association.—The Legislative Committee, meeting at Raleigh, N. C., January 24, drew up a bill to present to the Legislature regarding the commission form of government.

South Dakota Association of Engineers and Surveyors.—At the meeting, Pierre, January 27, the following officers were elected: President, S. B. Powell, Sioux Falls; Vice-President, B. E. Lovejoy, Redfield; Secretary-Treasurer, R. E. Easton, Aberdeen. These three, with L. K. Mathers, of Mitchell, and B. H. Townsend, of Fort Pierre, make up the Executive Board.

Kansas Engineering Society.—The first annual meeting was held at the Commercial Club, Topeka, January 20-21. About one hundred members were in attendance. Governor W. R. Stubbs in his address of welcome spoke in favor of the construction of reservoirs as a means of preventing floods. Prof. W. C. Hoad, University of Kansas, responded. He also presented the report of the Committee on Stream Pollution and Sewerage. Speakers in the closing session were: N. T. Veatch, of the State University, who spoke on "The Improved State Fish Hatchery at Pratt"; V. R. Parkhurst, Topeka, "Drainage and Food Production"; Myron C. Bowerman, "Shop System of the Capital Iron Works"; E. F. A. Renisch, "Tree Planting on Highways"; R. V. Leeson, Topeka, "Legislation."

Calendar of Meetings

February 15-17.

Iowa Engineering Society.—Annual Meeting, Des Moines, Ia.—S. M. Woodward, Secretary, Iowa City, Ia.

February 16.

Fourth Annual Chicago Cement Show, Colliseum, Chicago, Ill.

February 16-18.

Idaho Society of Engineers.—Second Annual Meeting, Twin Falls.—Gordon C. Smith, Secretary, Boise, Idaho.

February 21-22.

Illinois Water Supply Association.—Annual Meeting, University of Illinois, Urbana, Ill.—E. Barton, Secretary, Urbana, Ill.

February 28-March 1.

Northwestern Cement Products Association, West Hotel, Minneapolis, Minn.—Henry B. Smith, Secretary, 834 Security Bank Building, Minneapolis, Minn.

March 1-3.

Engineering Society of Wisconsin.—Annual Meeting, Madison, Wis.—W. G. Kirchhoff, Secretary, Vrooman Building, Madison, Wis.

March 6-11.

Canadian Cement and Concrete Association.—Annual Convention, Toronto, Ont.—Wm. Snaith, Secretary, 57 Adelaide street East, Toronto, Ont.

May.

City Commission Congress.—Meeting, Galveston, Tex.—Mayor Lewis Fisher, Chairman of Committee, Galveston, Tex.

May 29-June 3.

National Electric Light Association.—Annual Convention, Engineering Societies Building, New York, N. Y.

June 6-10.

American Water Works Association.—Thirty-first Annual Convention, Powers Hotel, Rochester, N. Y.—John M. Diven, Secretary, 14 George street, Charleston, S. C.

June 11-16.

International Association of Chiefs of Police.—Eighteenth Annual Convention, Rochester, N. Y.—Major Richard Sylvester, Superintendent of Police, Washington, D. C., President.

June 13-18.

New York State Association of Chiefs of Police.—Annual Convention, Rochester, N. Y.

PERSONALS

BACHELOR, W. L., Mayor of Hastings, Fla., was knocked down by a runaway team and seriously injured.

FANNING, JAMES J., Secretary to the Mayor of Dallas, Tex., has resigned to become associated with the Dallas Crooked Pine Block Co.

FOSTER, HARRY E., chief engineer of Medford, Ore., will resign and devote himself to general work. S. E. Semon, assistant engineer, will probably be appointed to fill the vacancy.

FULTON, W. S., has resigned his position as chief engineer, Topeka, Kan., and will become engineering head of the Kaw Paving Co., a local concern.

GALBRAITH, J. L., has been elected Mayor of Henderson, Tenn.

GOVERN, EDWARD J., Rochester, N. Y., has been appointed by State Engineer Benschel division engineer for the western division; salary \$4,200.

GREBAUGH, RALPH W., has been appointed to take charge of the water and electric light plants, streets and sewers of Atlantic Highlands, N. J.

HODGE, H. W., of New York, with M. J. Butler, general manager of the Dominion Iron & Steel Company, has been chosen to settle the differences of opinion among the board of engineers in charge of the construction of the Quebec bridge as to the adoption of a design.

KINNICUTT, LEONARD P., a recognized authority on sewage disposal and water supply, died at Worcester, Mass., Feb. 6, aged fifty-six years.

MARSH, C. L., Cleveland, O., has been chosen to fill the position of city engineer, Gadsden, Ala., vacated by Wilburn Hill.

MCGRATH, GEO. B., is now representing the U. S. Wood Preserving Co. in New England.

MILHEIM, JOHN, of the Niagara Hose Company, succeeds Charles McCormick as Fire Chief at Tonawanda, N. Y.

MILLS, GEORGE C., of Rochester, has received appointment from State Engineer Benschel as resident engineer; salary \$3,000.

MORRIS, FRANK E., Cincinnati, has resigned the position of Assistant City Engineer and will engage in private business.

PAXTON, JOHN W., of Norfolk, Va., has been appointed superintendent of the Street Cleaning Department of Washington, D. C.

SCHALK, OTTO B., succeeds James A. Rowe on the board of health, Newark, N. J.

STANLEY, ORRIN E., formerly City Engineer of Pierre, S. D., has opened an office for the practice of municipal, railway and topographical engineering in the Chamber of Commerce Building, Portland, Ore.

STEVENS, COL. EDWIN A., Hoboken, N. J., has been appointed Commissioner of Public Roads of New Jersey, succeeding Frederick Gilkyson, whose term expired recently. He is an alumnus of Stevens Institute, founded by one of his ancestors, and is also an alumnus of Princeton University in the same class with Governor Wilson.

TRAMMELL, J. D., Fort Worth, Tex., has resigned his position as City Engineer to become chairman of the board to supervise construction of the new city reservoir. Frank J. vonZuber, assistant engineer, becomes acting chief engineer.

WOHLHUTER, A. F., succeeds W. C. Mitchell as chief of the fire department, Albert Lea, Minn.

ZACHARY, I. L., Atlanta, Ga., has been appointed City Engineer of Brunswick, Ga.

TRADE NOTES

Cast-Iron Pipe.—Chicago—January bookings were better than for January of last year and better than the average for that month. Quotations: 4-inch, \$25; 6 to 12-inch, \$24; 16-inch and up, \$23.50. Birmingham—Tonnage recently placed with Southern producers is large and prospects are considered very good. Prices have been advanced. Quotations: 4 to 6-inch, \$21; 8 to 12-inch, \$20; over 12-inch, average, \$19.

New York—Eastern foundries have much work booked for the spring months. Quotations: 6-inch, carload, \$21.50 to \$22.

Lead—Lead is easy. Quotations: New York, 4.45c.; St. Louis, 4.30c.

Vitrified Sewer Pipe.—The general quotation on first-class vitrified standard sewer pipe and fittings, 3 to 24 in., in carload lots, f. o. b. factory, is 88 per cent discount. The demand is comparatively light and the market is not very strong, owing to competition and a desire to move stocks.

Bitumens in Road Construction.—The Good Roads Improvement Company, Cincinnati, O., whose product—Asphaltilene—is sold by Alden Speare's Sons Company, No. 253 Broadway, New York, publish a handsome booklet describing their product and explaining in a general way its manufacture and the scientific reason why it is better than asphalt which are merely byproducts of other processes. Asphaltilene is distilled directly and primarily for road work. It is a straight-run material, so-called. That is to say, the distilling process is so conducted as to give the maximum of the grades of bitumen most valuable in road work. This is contrasted with a product of distillation where the main object is to obtain bitumen for other purposes, such as gas light oils and lubricating oils. Such products are too hard and are cut back with light oils. Both the very hard and the very light bitumen are unstable, the former chemically and the latter physically, as compared with the medium grade bitumens needed for road work.

Asphaltilene is made in three grades—A, B and C, graded according to gravity, and each suited for a different method of application. A is applied at atmosphere temperature, B requires heating and C should be mixed with heated stone. The pamphlet contains illustrations and evidence going to prove the correctness of the theoretical argument in favor of Asphaltilene.

Granite Blocks.—The Harris Granite Quarries Co., of Salisbury, N. C., has recently developed an extensive business in granite paving blocks, although originally it had no intention of entering this field. The company's stone dresses to unusually close joints, and this fact led a street railway company to suggest making blocks for use in street tracks. Other traction companies found the blocks satisfactory and the company is now prepared to furnish them for general paving purposes. The properties of the stone and some of the advantages of granite block pavements are explained in a pamphlet, which also contains illustrations.

Concrete Dumping Car.—J. L. Blaker, Blaker Mills, W. Va., has placed on the market a combined bottom dumping bucket and car. The bucket forms the body of the car and rests upon cradles attached to the steel frame of the truck. The bucket dumps either directly down or on the side.

Electric Protection Company.—The New York Board of Estimate has granted a franchise to the Electric Protection Company to operate an automatic fire and burglar alarm service in the city. The matter has been before the Board for some time, and the Franchise Committee, which is composed of Mayor Gaynor, Controller Prendergast and President Mitchel, of the Aldermen, after investigating the new system, decided to allow its installation.

It was said that Daniel G. Reid, of Rock Island and Tin Plate fame, holds the controlling interest in the new company.

The Goodrich Picture.—The B. F. Goodrich Company is now sending out its annual souvenir picture, a portrait by Carroll Beckwith. This year the Goodrich girl's name is Beatrix. Her coming was announced by a note from the lady, accompanied by her miniature. The 1911 annual souvenir is the twenty-third issued by the company, the first one having been given out in 1889.

Troy Wagons.—The Troy Wagon Works Company, Troy, O., announce that their dumping wagons and boxes are now handled by the J. I. Case Threshing Machine Company, Racine, Wis. The Troy wagon is always easily recognized by the shaft placed along the outside of the box, by means of which the doors are raised and lowered. The shaft carries spiral drums around which the door lifting chains are wound. It is a simple, strong and effective device.

Construction Exhibit.—The trustees of Columbia University, New York City, announce an exhibition of illustrated books and prints showing the development of construction and transportation from the fifteenth to the nineteenth century, loaned by William Barclay Parsons, in the library of the university, February 1 to 25, from 2 until 5 each week day afternoon.

Technical Data.—A new publication called Data has recently been started by the Technical Data & Appliance Company, 92 La Salle street, Chicago, Ill. This magazine, which is published monthly, is devoted exclusively to engineering data and is intended to supplement the regular engineers' pocketbook by providing information on various subjects which can be readily filed either in a card index file or a small loose leaf pocket note book. With this object in view, the engineering data presented is in tabloid form, being printed on leaves measuring 3 x 5 inches, which can be readily detached from the binder for filing. A sample of one of the pages is shown herewith.

CENTRAL STATION STATISTICS

CITIES 2,000 TO 3,000 POPULATION IN THE STATE OF IOWA, YEAR 1909

Station Number.....	11	12	13	14	15	16	17	18	Av. 11 to 18
Population, thousands.....	2.2	2.5	2.5	2.7	2.8	3.0	3.0	3.0	2.71
Consumers per 100 pop.....	12.	6.	.....	11.	12.	9.	10.	10.	10.
Station Capacity									
Kilowatts.....	75.	80.	130.	110.	135.	175.	150.	120.	122.
Watts per capita.....	34.	32.	52.	41.	48.	58.	50.	40.	44.
Ratio trans. to sta. cap.....	0.7	.....	.....	1.2	0.9	1.2	D.C.	1.3	1.1
Load per kw. Sta. Cap.									
Lamps, kw.....	2.3	1.3	2.1	1.6	2.2	1.3	1.2	1.8	1.7
Motors, ".....	0.4	0.0	0.0	0.5	0.0	0.0	0.0	0.8	0.2
Heat and miscellaneous, ".....	0.1	.....	0.0	0.4	0.5	0.0	0.0	0.3	0.2
Total connected, ".....	2.8	1.3	2.1	2.5	2.7	1.3	1.2	2.9	2.1
Yearly load factor.....	45.	.....	.....	24.	24.	.....	.....	25.	28.
Investment, Dollars									
Per kw. capacity.....	\$292.	[\$187.	\$138.	\$218.	\$200.	\$200.	\$167.	\$367.	\$221.
Per capita.....	10.	6.	7.	9.	9.	11.	8.	15.	9.
Gross Income, Dollars									
Per kw. capacity.....	\$137.	\$69.	.....	\$94.	\$67.	\$101.	\$67.	\$132.	\$95.
Per consumer.....	40.	40.	44.	36.	38.	65.	33.	50.	43.
Per capita.....	4.60	2.20	.....	3.80	3.20	5.90	3.30	3.30	3.80
Ratio expense to gross income	62%	73%	72%	79%	72%	53%	.....	32%	63%

Chicago, November, 1910.

DATA

Sheet No. 67

Long Handled Concrete Tools.—The Arrowsmith Concrete Tool Company, Arrowsmith, Ill., at their third annual exhibit at the Chicago Cement Show circulated a pamphlet in which the merits of their long handled cement tools are condensed into five definite claims as follows:

1. The connections fasten right on the trowel blade.

2. The tools are adjustable to any position.

3. The tools are perfectly tight. There is no leverage to wear and get loose, and there is absolutely no danger of digging in the mortar.

4. The tools can be adjusted with the handle perfectly flat with the trowel or they can be adjusted with the handle at right angles or at any intermediate angle.

5. In making concrete sidewalks it is necessary to trowel float. To do this it is necessary to run the trowel across the walk perfectly flat, thereby causing a suction and drawing up the water; then run the trowel back over it with the edge raised to prevent digging in mortar. Hence rigidity of the handle is necessary.

Sewer Pipe.—In his annual report to the stockholders of the American Sewer Pipe Company President George R. Hill has this to say: "Our efforts have been concentrated on increasing the physical value of our plants, operating them to the fullest capacity, thereby enabling us to produce material at minimum cost, notwithstanding the deplorable conditions existing in the trade the past year—the low prices which prevailed—as well as the large increase in the cost of raw material and advance in wages. The physical condition of the properties has been kept up to the fullest extent during the past year by the expenditure of over \$170,000 for maintenance. We have also added approximately \$32,000 in permanent improvements by the purchase of additional real estate. The management has made a number of beneficial changes and is continuing to do so. We are doubling the capacity of our factory located at Brazil, Ind., so as to enable us to reach the Canadian markets; also changing one of the plants into a face brick factory, for which material there is a large demand; and transforming one of the idle plants into a paving brick factory. The demand for brick pavements—both city and country—is rapidly increasing, and we anticipate larger sales of this material in the immediate future. The company's balance sheet for the past year shows a profit of \$51,925.63.

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THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Massachusetts	Westfield	Feb. 17, 2 p.m.	Repaving streets, including recutting and laying on concrete foundation about 11,647 sq. yd. old granite block and furn. and lay 4,185 sq. yd. new.	James R. Bryan, Chm. Com.
Massachusetts	Boston	Feb. 17	Furn. crushed stone and stone dust for year ending Feb. 1, 1912	J. Edw. Mullen, Supt. Supplies.
Indiana	Franklin	Feb. 18, 1 p.m.	Grad. gravel and otherwise improve highway.	Wm. B. Jennings, County Auditor.
West Virginia	Huntington	Feb. 20, 1 p.m.	Paving two alleys.	John Coon, Comr. of Streets.
Ohio	Defiance	Feb. 20	Stoning 1½ mile road, approximate cost, \$5,000.	County Auditor
Massachusetts	Boston	Feb. 20, 1 p.m.	Constr. roads, walks, drains, etc. at Ft. Andrews.	Capt. A. M. Miller, Constr. Q.M.
Michigan	Ludington	Feb. 20, 4 p.m.	Pave various streets.	Dean Thompson, City Clerk.
New York	Mineola	Feb. 20, 10:30 a.m.	Constr. and impr. two county roads.	W. E. Luyster, Clk. Bd. of Supvrs.
Washington	Adna	Feb. 20	Macad. about 16,000 ft. road.	H. H. Swafford, County Auditor.
Iowa	Corning	Feb. 20, 8 p.m.	Curb, repair, grade and pave various streets.	City Clerk.
Ohio	Columbus	Feb. 23	Grade and gravel road.	F. M. Sayre, County Auditor.
Oregon	Portland	Feb. 23	Constructing pavement on Jersey st.	J. W. Morris, City Engineer.
Oregon	St. Johns	Feb. 23	Constructing several hard service streets.	A. M. Esson, City Representative.
Ohio	Cincinnati	Feb. 24, noon	Resurf. Independence st., also culvert and fill on Mt. Alverno rd	Fred Dreihls, Clk. Co. Comrs.
New York	Buffalo	Feb. 24, 11 a.m.	Paving various streets.	Dept. of Pub. Works.
Ohio	Cincinnati	Feb. 24, noon	Impr. Loveland and Madeira road.	Fred Dreihls, Clk. Bd. Co. Comrs.
Ohio	Wapakoneta	Feb. 25	Improv. Mechanic street.	Fred A. Klipfel, Village Clerk.
Ohio	Lakewood	Feb. 27, noon	Pave Summit and repair brick pave. in other streets.	B. M. Cook, Village Clerk.
New Jersey	Atlantic City	Feb. 27	Pave two streets.	E. D. Rightmire, City Engr.
New York	Fort Niagara	Feb. 28	Construct concr. walks and macad. and clay roads.	Lieut. E. H. Wagner, 29th Inf. U.S.A
New York	Sackett's Harbor	Mar. 1, 2 p.m.	Constr. approx. 28,800 sq. ft. macad. road and 800 sq. ft. concr. walk at Madison Barracks.	Constructing Q.M.
Manitoba	Winnipeg	Mar. 1, 11 a.m.	Supply 1,000 to 1,500 tons asphalt for paving.	M. Peterson, Secy. Bd. of Control.
Indiana	Portland	Mar. 1, noon	Improving certain highways.	W. Lea Smith, County Auditor.
Texas	Sweetwater	Mar. 4	Constr. about 22,000 sq. yd. macad-asph. pave.	L. S. Polk, Secy.
New Jersey	Plainfield	Mar. 6	Furnish crushed stone, culverts, etc.	City Clerk.
Georgia	Savannah	Mar. 9, noon	Furn. 5,000 cu. yd. cem. gravel or like material for imp. pub. rds.	County Commissioners.
Mississippi	Jackson	Mar. 9	Constr. gravel and sand roads. \$100,000 bonds issued.	Mayes Cooper, Hwy. Engr.
Minnesota	Worthington	Mar. 13, 2 p.m.	Grade approx. 10,066 yards.	E. C. Pannell, Co. Aud.
SEWERAGE				
West Virginia	Huntington	Feb. 20, 1 p.m.	Laying sewers in various streets.	John Coon, Comr. of Streets.
South Carolina	Charleston	Feb. 20, noon	Constr. pump pits and appurtenances for sewer system.	J. H. Dingle, City Engr.
Iowa	Mt. Vernon	Feb. 21, 4 p.m.	Constr. 7½ mile sanitary sewer, 6 to 15 in., pipe, with septic tank and filter beds.	Wm. E. Gamble, Town Clerk
Iowa	Clarinda	Feb. 21	Furn. one mile of 6-in. sanitary sewer.	C. W. Stuart, City Clerk.
Oklahoma	Clinton	Feb. 21, 8 p.m.	Constr. 26,000 ft. of 8-in. lateral sewers, vit. pipe, with man-holes, lampholes, etc.	C. C. Smith, City Clerk.
Minnesota	Melrose	Feb. 21	Constr. sewerage system.	F. J. Weissner, City Clerk.
Illinois	Paris	Feb. 23, 2:30 p.m.	Furn. and lay approx. 710 ft. 36-in. and 3,834 ft. of 60 in. reinf. concrete or brick sewers.	Granville Jenkins, Chm. Sewer. Com.
Maryland	Baltimore	Feb. 23	Construct Pratt St. Trunk Sewer.	J. Sewell Thomas, City Reg.
New York	Hastings-on-Hud	Feb. 24	Construct sewers in various streets. About 16,000 feet.	Jos. E. Murphy, Clerk Bd. Trust.
Ohio	Lakewood	Feb. 27, noon	Construct sewer main in Riverside road.	B. M. Cook, Village Clerk.
Ohio	Cleveland	Feb. 28, noon	Construct sewers in Cleveland Heights.	H. H. Canfield, 309 Beckman Bldg.
Arizona	Parker	Mar. 1, 2 p.m.	Construct sewer at Colorado River School.	Comr. Ind. Affairs, Wash'n., D. C.
New York	Watertown	Mar. 3, 8 p.m.	Constr. sanitary sewer, requiring approx. 1,800 ft. 20-in. tile; 300 ft. 18-in. tile; 300 ft. 15-in. tile; 1,200 ft. 12-in. tile; 1,200 ft. 10-in. tile.	Board of Public Works.
Georgia	Atlanta	Mar. 14	Constr. intercepting sewer and disp. plant.	City Council.
California	San Jose	July 3	Construct septic tank for County hospital.	City Clerk.
WATER SUPPLY				
Ohio	Nottingham	Feb. 17, noon	Constr. water mains in various streets.	J. C. Steinicke, Village Clerk.
Nebraska	North Bend	Feb. 17, 8 p.m.	Install pumping sta. includ. wells, pipes, engines, etc.	Frank D. Howe, City Clerk.
California	Madera	Feb. 20, 8 p.m.	Constr. water system.	City Clerk.
Minnesota	Fergus Falls	Feb. 20	Furn. 1,200 ft. of 6-in. and 500 ft. of 4-in. c.i. pipe, c.i. T's, etc.	S. E. Levorsen, City Clerk.
Quebec, Can.	Mont. Laurier			
	(P.O. Rapide de L'Original)	Feb. 20	Construct water supply.	Anthime Dubreuil, Mayor.
Iowa	Marshalltown	Feb. 20, noon	Install waterwheels, pumps, etc., at dam.	F. B. Wiley, City Clerk.
New York	Albany	Feb. 20, 2 p.m.	Furn. c. i. water pipe, tapping sleeves, oil, etc.	Isidor Wachsmann, Secy. B. C. & S
Washington	Colville	Feb. 21	Constructing 3,200 ft. of 10 in. wood pipe.	City Clerk.
Ohio	Coshocton	Feb. 21	Furn. 4,000,000 gal. pump. eng. and two centrif. pump. units of 15,000,000 gal. capy. per day.	City Clerk.
West Virginia	Parkersburg	Feb. 23, 8 p.m.	Constr. water supply system incl. steel stand pipe.	Frank Good, City Aud.
Nebraska	Wymore	Feb. 23	Constr. water and elec. light plant, approx. cost \$57,000.	Henry Hohl, City Engr.
Ohio	Euclid	Feb. 27, noon	Construct 6-in. water main.	F. H. Shoaff, Village Clerk.
Ohio	Lakewood	Feb. 27, noon	Construct water main in Franklin ave.	B. M. Cook, Village Clerk.
New York	Fort Terry	Feb. 28, 11 a.m.	Constr. concr. reserv. and extend water main.	Capt. F. T. Arnold, Constr. Q 1 U.S.A., New London, Conn.
Illinois	Niles Center	Feb. 28, 8 p.m.	Constr. w. works, incl. bldgs., machy. tower, reserv. and dp. well	Geo. H. Klehm, Pres. Bd. Trust.
Ohio	Wooster	Feb. 31, noon	Constr. addition to waterworks system.	S. L. Smith, Dir. Pub. Serv.
Missouri	Sikeston	Mar. 1, 8 p.m.	Constr. water supply system.	H. C. Hester, City Clerk.
South Dakota	Bridgewater	Mar. 6, 8 p.m.	Constr. water tank and tower, cap. 50,000 gal. height 125 ft.	O. A. Rietz, City Auditor.
Wyoming	Sheridan	Mar. 6, 3 p.m.	Constr. water supply main with approx. 7,934 ft. of 14-in. and 760 ft. of 10 in. c. i. pipe.	Arnold Tschirgi, City Engr.
Pennsylvania	West Telford	April 1	Constr. water works; approx. cost \$30,000.	H. Z. Walpole, Secy. Water Co
BRIDGES				
California	San Jose	Feb. 20	Construct concrete bridge, 54 ft. span.	City Clerk.
Minnesota	Hallack	Feb. 20, 2 p.m.	Constr. 3 steel bridges, 22 large and 17 small culverts.	Bd. Co. Comrs.
North Dakota	Hillsboro	Feb. 23, 3 p.m.	Constr. steel, wood and grade for various bridges.	Nels O. Lindoas, Co. Aud.
Ohio	Columbus	Feb. 23	Constr. floors on and grade for various bridges.	County Commissioners.
Indiana	Indianapolis	Feb. 24, 10 a.m.	Constr. bridge over Crooked Creek.	Albert Sahm, Co. Aud.
South Dakota	Yankton	Feb. 27, 7:30 p.m.	Constr. concr. bridge over Rhine Creek, 50-ft. span.	John W. Summers, City Aud.
Florida	Jacksonville	Feb. 27	Constr. bridge over Hogans Creek.	City Clerk.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES (Continued)				
Ohio.....	Springfield.....	Feb. 28.....	Constr. 120 ft. bridge over Mad river.....	County Commissioners.
Virginia.....	Danville.....	Mar. 1.....	Constr. superstructure for bridge, est. cost \$40,000.....	J. O. Wayman, City Engr.
New York.....	Kingston.....	Mar. 2.....	Construct concrete bridge across creek at Eddyville.....	Jas. F. Loughran, Supt. Hwys.
California.....	Los Angeles.....	Mar. 6, 2 p.m.....	Constr. concrete arches, graveled approaches, curbs, fences, hand-railing, pylons, etc., across Arroyo Seco and extension of Pasadena Ave.....	H. T. Lelande, County Clerk.
California.....	South Pasadena.....	Mar. 6, 2 p.m.....	Constr. 6 arch concr. bridge, 600 ft long.....	City Clerk.
Wisconsin.....	Janesville.....	Mar. 7, 2 p.m.....	Constr. 2 bridges across Rock River, one 384 and one 264 ft. long	W. F. Carle, Chm. St. Assess. Com.
LIGHTING AND POWER				
Ohio.....	Hamilton.....	Feb. 17, noon.....	Furn. 100 9-in. x 45 ft. poles, 150 8-in. x 40 and 75 8-in. x 35, all of Idaho white cedar.....	C. M. Robertson, Clerk.
Massachusetts.....	Westfield.....	Feb. 17, 2 p.m.....	Install. wiring for underground system of elec. light and pow. w.	Oren E. Parks, Town Engr.
Pennsylvania.....	Washington.....	Feb. 20, 7:30 p.m.....	Light borough for five and ten years, commencing May 1.....	John Griffiths, Secretary.
West Virginia.....	Parkersburg.....	Feb. 23, 8 p.m.....	Furn. and install elec. light plant.....	Frank Good, City Auditor.
Iowa.....	Atlantic.....	Mar. 1.....	Imp. Elec. Lt. and Power Plant, probable cost \$40,000.....	E. T. Nichols, City Clerk.
Mexico.....	Monterey, N. L.....	Mar. 1.....	Erection of gas plant.....	Lewis Lukes, Apartado 58.
Alberta, Can.....	Strathcona.....	Mar. 1.....	Install engines, boilers and generators.....	David Ewing, Ch. Engr.
Massachusetts.....	Boston.....	Mar. 1.....	Furn. street light; 12,000 gas lamps.....	Comr. Rourke, D. P. W.
Pennsylvania.....	Coraopolis.....	Mar. 1, 7 p.m.....	Furn. one 1,500,000 gal. triplex pump; one 150 h.p. gas eng. for driving pump; two 225 h.p. gas engines, to be dir. con. to 175 K.V.A., 2,300 volts, 60 cycles, 3-phase alter. cur. gener.; one 75 h.p. gas engine to be dir. con. to 50 K.V.A.; two 175 K.V.A., 2,300 volts, 60 cycles, 3-phase alter. cur. gener., comp. with exciters; one 50 K.V.A.; one 5-panel switchboard, compl. one 50-light series, luminous or metallic flame arc lamp equipment complete.....	Borough Clerk.
FIRE EQUIPMENT				
Montana.....	Helena.....	Feb. 29, 8 p.m.....	Furn. comb. auto. fire wagon, carry. 2,000 ft. hose and one 35 gallon chemical tank.....	J. A. Mattson, City Clerk.
Montana.....	Bozeman.....	Mar. 2, 5 p.m.....	Furn. 80 to 90 h.p. A. L. A. M. rating auto, chem. gasoline wagon with speed of 45 mi., including 1,200 ft. of 2 1/2 hose, 40-gal. chemical, tank, etc.....	A. M. Brandenburg, City Clerk.
New Jersey.....	Princeton.....	July 5.....	Furn. auto pumping engine.....	E. M. Updike, Chm. F. & W. Com.
MISCELLANEOUS				
Washington.....	Spokane.....	Feb. 17, 2 p.m.....	Furn. five pass'gr. elec. auto.....	John Gifford, City Purch. Agt.
New York.....	New York.....	Feb. 20, noon.....	Dredging in various boroughs.....	Calvin Tomkins, Comr. of Docks.
North Dakota.....	Grand Forks.....	Feb. 20.....	Constr. city hall.....	T. J. Hagen, City Clerk.
New York.....	Rochester.....	Feb. 20, 11 a.m.....	Constr. ten election houses.....	B. N. Chamberlain, Secy. Comrs. PB.
Minnesota.....	Aitkin.....	Feb. 21, 8 p.m.....	Constr. public library building.....	Mrs. B. L. Hollister, Secy.
Pennsylvania.....	Wilkes Barre.....	Feb. 24, noon.....	Constructing police station.....	Fred H. Gates, City Clerk.

STREET IMPROVEMENTS

Los Angeles, Cal.—Plans and specifications will be prepared for improving Blades and 7th sts.—H. J. Leland, City Clerk.

Yuba City, Cal.—Land owners in this county will ask Board of Supervisors to open new wagon road running north and south and connecting Franklin Corners road with Onstott road west of this city.

Colorado Springs, Col.—Colorado Springs Co., Gazette Bldg., is considering expenditure of \$25,000 on improvements in Prospect Lake, East End and Cheyenne additions to city.

Hartford, Conn.—Various division engineers have made following surveys: 11,800 lin. ft. on road from Roxbury Center to Washington Green, in the Town of Roxbury; 3,000 lin. ft. on Peck Hill, in the Town of Morris; the Town of Chatham, 17,100 lin. ft. on the Marlboro-Portland turnpike; 7,900 lin. ft. on Middletown ave.; 2,500 lin. ft. on Sunset st.

Freeport, Ill.—Property owners of Float, High and Jefferson Sts. have asked for macadam instead of brick paving.

Glencoe, Ill.—Village is considering constructing sidewalks at a cost of \$24,038.40.

Pekin, Ill.—Park ave. will be improved at cost of \$52,961.50; length 5,140 ft.

Rockford, Ill.—City is considering laying of brick pavement on West State st.

Waukegan, Ill.—Improvement Board has passed resolution for resurfacing Sheridan road from north line of Clayton st. to the city limits; cost \$18,500.—Fred. W. Buck, Mayor.

Brazil, Ind.—Commissioners of Clay and Park Counties will soon award a contract for constructing gravel road 10,560 ft. long on county line.

Muscatine, Ia.—Council Paving Committee has recommended improvement of more than a mile of streets.

Winchester, Ky.—Paving of Main St. will be considered in near future.

Baltimore, Md.—Ways and Means Committee of Council is considering \$5,000,000 expenditure for paving on the Buffalo plan.

Relay, Md.—Citizens are considering additional tax levy for laying sidewalks and making other improvements.

Malden, Mass.—Cost of paving Pleasant st. has been estimated at \$20,000; bids will soon be received.—George W. Stiles, Superintendent Paving; L. D. Holden, City Clerk.

Detroit, Mich.—Council will consider paving of Willis ave. with cedar or concrete; cost about \$17,000.—J. J. Haarer, Commissioner of Public Works.

Lucedale, Miss.—Board of Supervisors will consider straightening of public road.

St. Joseph, Mo.—Board of Public Works will ask for bids late in spring for two blocks of asphalt paving on 4th st., one block of asphalt paving on Jule st., resurfacing with asphalt on Charles st. and resurfacing with asphalt on brick and concrete foundations on various streets.—Dave Lawlor, City Engineer.

Bayonne, N. J.—Council has again passed ordinance for repaving Ave. E with asphalt.

Haddon Heights, N. J.—Citizens will vote Feb. 28 on \$60,000 bonds to improve highways.

New Brunswick, N. J.—Board of Freeholders will consider macadamizing of Bonhamton road.

Perth Amboy, N. J.—Board of Aldermen is considering extension of Jefferson st.

Trenton, N. J.—Board of Freeholders is considering improvement of two roads.

Trenton, N. J.—Council is considering ordinances providing that crushed stone be placed on Whittaker ave. and that Governor ave. be scraped and covered with stone screenings.

Binghamton, N. Y.—Construction of macadam road between Whitney Point and Glen Aubrey; length 5.34 miles; cost \$60,000.

Mount Vernon, N. Y.—Council is considering asking for bids for paving East Lincoln ave. with sheet asphalt and asphalt blocks; also paving two other streets.

Newburgh, N. Y.—Street Committee is planning paving of entire length of Grand st. with sheet asphalt, bitulithic, wooden block or brick.

Boonville, N. C.—Boonville Township is considering bond issue for road improvements.

Barberton, O.—Council has received estimates for paving following streets this summer: Fourth st., Creedmore to Moore, \$2,690.31; Wunderlich ave., \$5,799.78; Third st., Baird to Erie, \$19,204.58; Creedmoore, 3rd to 4th, \$1,855.33.

Elyria, O.—City is considering 2,690 ft. of paving.—C. S. Butts, City Engineer.

Medina, O.—City is considering paving of one mile with brick.

Youngstown, O.—Council has passed ordinance for straightening and widening Erie st.

Zanesville, O.—Bids will be received in April for 29,477 sq. yds. of brick paving at cost of \$41,672.—Herbert Harris, City Engineer.

Sapulpa, Okla.—City Commissioners will enlarge paving district and will advertise for bids.

Hillsboro, Ore.—Louis C. Kelsey, Selling Bldg., Portland, will make survey and prepare plans for draining and paving of streets.

Erie, Pa.—Council is considering paving of 6th and 7th sts. and Park ave.

Franklin, Pa.—Council has decided to pave six streets.

Wilkes Barre, Pa.—Council is considering paving of Sunset st. and Capouse ave.

Bartlett, Tex.—Williamson County Commissioners will consider calling election in Precinct No. 3 on \$100,000 good road bonds.

Columbus, Tex.—Colorado County will vote on \$250,000 of bonds for road construction.

Dallas, Tex.—Plans have been submitted to City by the interested property owners looking to paving of Forest from Central, eastward to Arza St.; Boulevard, from Central to Arza, and for the opening and improving of Palm Ave., and finally for improving of intersecting streets, between Grand and Forest Aves.

Fort Worth, Tex.—Paving of portion of Taylor st. is being considered.

Bridgewater, Va.—Council is considering macadamizing East Commerce st.

Farmville, Va.—City is considering brick, macadam, asphalt or asphalt block paving, with granolithic sidewalks and curbing.—W. E. Anderson, Chairman Street Committee.

Newport News, Va.—Council will consider \$3,120 appropriation to pave 30th st. with asphalt block.

Pulaski, Va.—Pulaski District has sold \$70,000 good roads bonds to Weil, Roth & Co., Cincinnati, O.

Wytheville, Va.—City is considering improvements to streets.—G. S. Sexton, Mayor.

Bellingham, Wash.—Bids will be asked in spring for laying sidewalks in five different districts. Address City Engineer Whitney.

Burlington, Wash.—Council is considering paving of streets.

Seattle, Wash.—Board of Public Works is considering following estimates: Paving Olympic way, \$59,300; Elliott ave., \$6,025; University st., \$8,600; bridge roadway on 23d ave. West, \$6,025.

Seattle, Wash.—Bids have been rejected by Board of Public Works for planing north half of Grand blvd.; new bids will be asked.

Spokane, Wash.—Plans have been completed by City Engineer Morton Macartney for grade separation along entire right of way through city of Northern Pacific Railway.

Parkersburg, W. Va.—County Engineer C. Skidmore and State Road Engineer E. D. Baker, associated, County Bldg., have prepared plans for vit. brick paving on 4-in. concrete base, and storm sewers; cost \$180,000.

CONTRACTS AWARDED

Denver, Col.—Improving Capitol Hill Improvement District No. 7, including grading streets to their full width, constructing concrete curb and gutter, surfacing roadways with smelter slag and disintegrated granite, constructing concrete sidewalk and other incidentals, to Municipal Construction Co., \$37,442; other bidders: Westcott-Doan Investment Co., \$38,826; Commonwealth Construction Co., \$39,784; Denver and Pueblo Construction Co., \$40,978; J. Fred Roberts, \$41,593; Anderson, Ord & Swope, \$44,096; Gaffy & Keefe Construction Co., \$45,554.

Palatka, Fla.—Construction of upwards of 1,700 yds. of granolithic sidewalks, to H. S. Jaudon Engineering Co., Savannah, Ga., \$0.6-10c. per sq. yd.

Peru, Ill.—To Peter Trompeter for paving Center st. with tarvia, \$7,273.

Laporte, Ind.—Construction of macadam road in Scipio Township, to Jacob Ackerman, city, \$21,530.

Marion, Ind.—To Jacob Drock and Will Williams for constructing the Alvin B. Scott mile and a sixth of stone road in the town of Fairmount, \$4,042; other bidders: William Yates, \$4,500; J. H. Hardin & Co., \$4,297; Omer Mackey, \$4,184.97.

Richmond, Ind.—To D. G. Burkhardt for improving South 4th st. with W. 1st and Kinsey sts., to J. L. Horning.

South Bend, Ind.—To Hoban & Roach, to pave first alley west of Michigan st., South to Monroe st., \$1,255.20; Nelsonville block will be used.

Vincennes, Ind.—Construction of the Williams gravel road in Vincennes Township, to William Bobe, city, \$9,200.

Muncie, Ind.—Construction of 10,560 ft. of brick road in Delaware County, to William Birch, city, \$42,000.

Wabash, Ind.—Construction of two macadam roads in Wabash County, to George M. Sewell, Laketon, \$9,200.

Washington, Ind.—Constructing three miles of gravel road in Daviess County, to M. H. Wilson, Montgomery, \$10,201.

Cedar Rapids, Ia.—Paving various streets, to M. Ford, \$64,030 for east side and \$18,535 for west side; curbing to Cedar Rapids Construction Co., \$10,414.64; other bidders: Smith Bros., \$10,466.98; Dearborn & Jackson, \$10,661.40; Concrete Construction Co., \$10,623.79; contract calls for 12,820 lin. ft. of curbing, 6x20 in.; 6.756 comb. curb and gutter around center parking; 5,380 ft. comb. curb and gutter along property parking and 4,480 ft. of 2-in. gutter.

Baltimore, Md.—Grading and paving four streets with cobblestone, to McLean Contracting Co., Maryland Trust Bldg., \$14,900.

Boston, Mass.—To B. & R. J. Lombard for teaming edgestones and flagging from South End Paving Yard, between Feb. 1, 1911, and Jan. 31, 1912, 8c. per lin. ft.; to Warren Bros. Co. for repairing asphalt pavements, as ordered by Commissioner, between Feb. 1, 1911, and Jan. 31, 1912, \$37.150.

Alpine, N. J.—Building stone road, to Edw. English, Englewood, \$7,144.

Buffalo, N. Y.—Street work: Oak st., Goodell to Carlton, repaving with asphalt, to German Rock Co., \$10,800; Milton st., Seneca to Pennsylvania Railroad, brick, to Constantine Construction Co., \$8,000; Krupp st., Broadway to Ashley, brick, to H. P. Burgard Co., \$5,600; Sanford st., Dewey to Leroy, asphalt, to German Rock Co., \$5,118.

Elizabeth City, N. C.—Street paving, to Peters Bros., \$1.62 per sq. yd. for Obesbo sheet paving asphalt.

Akron, O.—To Peters & Palmer, Mansfield, for construction of section 6 of Akron-Hudson road, \$69,560.

Cleveland, O.—Brick paving, to C. F. Reiley for E. 36th pl., \$1,888, and Sowinski ave., \$7,783; to Roehl Bros. for W. 61st st., \$4,122, W. 54th st. \$13,443, Hurley ave. \$3,049, and W. 83d st. \$13,101; to Baldwin Bros., for Woodhill road No. 1, \$7,429, Woodhill road No. 3 \$31,069, and Hoffman ave. \$8,748; to the Cleveland Trinidad Paving Co., for Woodhill road No. 2 \$34,489, and Ansel road \$23,936; to M. E. Kavanaugh, for Aetna road \$14,113, E. 125th st. \$8,294, Ackley road \$18,628, and Kennedy ave. \$12,849.

Youngstown, O.—Building Loveland Hill road, to Coy Bros., Calia, \$216.52.

Portsmouth, Va.—Building macadam roadway in Upper Glasgow st., to Dalby-Nottingham Co., \$4,700; Great Bridge roadway, to Mr. Denby, \$11,890.92.

Montesano, Wash.—To Contractors Tuttle & Maloney for planing 4,000 ft. of road running east from South Montesano.

BIDS RECEIVED

Tuscaloosa, Ala.—Paving streets: Alabama Paving Co., Birmingham, vit. brick, \$1.94 per sq. yd.; Southern Paving and Construction Co., Chattanooga, vit. brick, \$1.86; Barber Asphalt Co., Atlanta, sheet asphalt, \$2.08; Southern Asphalt and Con-

struction Co., \$1.97; Creosoted Wood Block Paving Co., \$2.40; Tuscaloosa Concrete and Supply Co., wood block, \$2.25; Tuscaloosa Concrete and Supply Co., vit. brick, \$1.85.

Michigan City, Ind.—Building sidewalks: W. H. Bell & Co., 8c. per sq. ft., grading 25c. per cu. yd., filling 25c. per cu. yd.; Vincent Milcarek, cement 8½c. per sq. ft., brick 9c. per sq. ft., grading 24c. per cu. yd.; Swan Magnuson, brick or cement 8½c., filling 17c.; J. E. Southard & Co., cement 8c., grading 25c., filling 25c.

Boston, Mass.—Construction of a part of the highway in Melrose known as the Lynn Fells road: Henry C. Carter, Middleton, \$15,452.20; Luigi C. Carchia, Boston, \$13,146.60; Fred E. Ellis, Melrose, \$12,908.16; Grant Conspaction Co., Boston, \$12,831.96; Coleman Bros., Boston, \$12,515.20; Thomas B. Fitzgibbon, Beverly, \$12,066; Richmond T. Hudson, Wilmington, \$11,595; C. Tsgro-cannini, Boston, \$11,558.80; Martin M. Condon, Watertown, \$11,434.90; Ciriaco & Cui-setta, Bezilacqua, Boston, \$11,178.60; James H. Fannon, Somerville, \$11,067.90; Rowe Contracting Co., Brighton, \$10,166.40.

Brooklyn, N. Y.—Regulating and paving with asphalt on a concrete foundation Gravesend ave. from Ave. C to Foster ave., Cranford Co., 52 9th St., lowest bidder, as follows: 19,228 sq. yds. asphalt pavement, 5 years' maintenance, 87c., and 2,744 cu. yds. concrete for pavement foundation, \$5.15; total, \$30,860.; totals of other bids: Barber Asphalt Paving Co., 30 Church st., New York, N. Y., \$33,813; Uvalde Asphalt Co., 1 Broadway, New York, N. Y., \$32,948; Brooklyn Alcatraz Asphalt Co., 407 Hamilton ave., Brooklyn, \$31,685, and Borough Asphalt Co., Metropolitan ave. and Newtown Creek, city, \$31,987.

Seattle, Wash.—Grading 45th ave., S. W., A. Peterson & Co., \$80,658.50; Mouglin & Price, 333 Burke Block, \$75,581.80; West Coast Construction Co., \$88,913.50; McKinnon, \$81,916.40; West Oregon st., A. Peterson & Co., Montera P. O., \$47,922.

SEWERAGE

Mobile, Ala.—Chief Engineer Smith has completed plans for extending sewer system into northern section of city.

Ashdown, Ark.—City has decided to construct sewer system.

Concord, Cal.—Spalding, Sloan & Robson, San Francisco, are preparing plans for sewer system.—E. P. Jackson, Town Clerk.

Denver, Col.—New bids for construction of sewers in the district of Park Hill, Denver, will be asked; work was originally awarded to the Municipal Construction Co. for \$17,596, but owing to a clerical error specifications only called for 65 manholes and 25 flush tanks instead of 90 manholes and 50 flush tanks.—Henry Read, President Board of Public Works.

Colorado Springs, Col.—Bids will soon be received for construction of storm sewers in District No. 1; estimated cost \$40,448.30.—T. L. Waggener, City Engineer.

Waterbury, Conn.—Board of Aldermen has decided to increase to \$300,000 bond issue available for construction of sewers.

Palm Beach, Fla.—Council has decided to issue \$55,000 bonds for sewer and other improvements.

Atlanta, Ga.—City is considering laying about 50 miles of sewers during year.

Chicago, Ill.—City is considering spending \$770,000 on two sewers in the south-west section of the city.—Chas. A. V. Standish, Secretary Board of Local Improvements.

Hoopeston, Ill.—Council has passed ordinance looking to construction of sewerage system; cost about \$70,000.

Danville, Ind.—Construction of a system of sanitary sewers is being considered; cost about \$25,000.

Richmond, Ind.—Board of Public Works has adopted resolutions for the construction of two sanitary sewers.—H. M. Hammond, President Board of Public Works.

Cascade, Ia.—City is having plans made for a \$30,000 sewer system.—Iowa Engineering Co., Clinton, Engineers.

Clinton, Ia.—City Engineer Hart has estimated cost of constructing sewers in District No. 4 at \$133,067.90.

Mansfield, La.—City is prepared to grant franchise for sewerage system.—W. E. Singleton, City Clerk.

Baltimore, Md.—Council is considering ordinance calling for election on \$10,000,000 sewerage loan to complete sewerage system.

Cambridge, Md.—Council is considering improvements of water works. Address Superintendent Jordan.

Owatonna, Minn.—Plans are being prepared by City Engineer Harvey Dartt for storm sewers; cost \$14,000.

St. Paul, Minn.—City will construct one mile of concrete and four miles of pipe sewer at St. Anthony Park; cost \$140,000.—L. W. Rundett, City Engineer.

Beverly, N. J.—Construction of sewerage system is being considered.

Montclair, N. J.—Municipalities of Essex County, Montclair, Orange, East Orange, Bloomfield and Glen Ridge contemplate entering a joint project for disposal of sewage.

Ocean City, N. J.—State Board of Health is considering plans prepared for proposed sewage disposal plant.

New Hartford, N. Y.—Village Board has decided to construct sewerage system and disposal plant.—A. M. Scripture, Consulting Engineer.

Hougenkeepsie, N. Y.—Board of Aldermen has decided to construct sewer on North Clinton st.

Edenton, N. C.—Town is considering \$20,000 bond issue for construction of sewer.

Ada, O.—State Board of Health has ordered installation of sewage disposal plant.

Chardon, O.—Council is considering plans by Engineer B. F. Hewitt, Geneva, for construction of sewer system.

Cincinnati, O.—City Engineer Shipley has estimated cost of constructing a sewer in McKeone, Schiff and Lewis s.s. at \$34,379.

Elyria, O.—City is considering construction of 916 ft. of 12 and 400 ft. of 10-in. pipe sewer, and four manholes with 2-ft. covers.—C. S. Butts, City Engineer.

Forest City, Ore.—Council has decided to employ engineer to make survey and estimate for trunk sewer.

Gresham, Ore.—Consulting Engineer Louis C. Kelsey, Selling Building, Portland, has recommended construction of sanitary sewerage system at cost of \$23,503.—Lewis Shattuck, Mayor.

Lebanon, Ore.—City will sell \$70,000 bonds for sewer construction.—Walker & Meagher, Engineers.

Parnassus, Pa.—Boroughs of Parnassus, New Kensington and Arnold are planning to construct joint sewage disposal plant.

Cuero, Tex.—Installation of sewerage system is being considered.

Burlington, Wash.—Plans will be prepared by Engineer Fred Octerman for installation of storm sewers.

Seattle, Wash.—Bids have been rejected for constructing sewer in Virginia st.

Port Washington, Wis.—City is considering \$35,000 bond issue for construction of sewerage system.

CONTRACTS AWARDED

Lawrence, Kan.—Constructing sewers in Haskell Place and Maple Lawn addition, to Kennedy Plumbing Co.

Newburgh, N. Y.—Building sewer on Fullerton ave. double strength tile pipe, to Michael Spino, \$14,280.70.

Walters, Okla.—Contract for the construction of sewers and water works has been sublet to Ries & Ries, who have commenced work; expect to complete the contract in 90 days.

Altoona, Pa.—To W. W. Saupp for construction of 8-in. sewer in 5th ave., 61c. per ft.

Timmonsville, S. C.—To Abec & Hart, Hickory, N. C., for construction of storm and sanitary sewers, \$14,185; work includes 3,250 ft. of 30-in. terra cotta sewer, 1,000 ft. of 24-in. terra cotta sewer, 1,550 ft. of 18-in. terra cotta sewer, 500 ft. of 15-in. terra cotta sewer and 2,050 ft. of 12-in. terra cotta sewer, 20 manholes, 16 catch basins and 3 6-in. siphons.—J. Newton Johnston, Florence, Engineer.

BIDS RECEIVED

Wilmington, Cal.—Sewering Canal st. and other streets, F. R. Fulmis, \$23,000 for sewer complete; Peter Gibovich, \$19,999; Krist Radich, \$21,970; John Balch, \$24,000; Joseph Chutuk, \$18,670; J. Zarubich, \$16,350; W. N. Hendricks, \$16,100; M. N. Mlagenovich, \$18,800.

WATER SUPPLY

Alabama City, Ala.—Council has decided to construct municipal water plant to supplement system owned and operated by Dwight Manufacturing Co.

Dothan, Ala.—City will expend \$60,000 to construct water works and electric light plant; will erect brick building and brick stack, construct \$5,000 reinforced concrete reservoir, install 2,000,000-gal. pump, 500-kw. electric unit, 500-h.p. steam boilers and 1,000-ft. air compressor.—B. R. Pilcher, Engineer in Charge.

Mobile, Ala.—Chief Engineer Smith has completed plans for extending water system into northern part of city.

Ashdown, Ark.—City has decided to construct water works.

Susanville, Cal.—Election on purchase of Cady Susanville water system is being considered.

Valparaiso, Ind.—Installation of filtration plant is being considered.

Emporia, Kan.—City proposes to install water works; cost \$13,000.—Matthew

Brown, city, Engineer; F. H. Smith, City Clerk.

Mulberry, Kan.—City is considering election on installation of water works and electric light plant; cost \$20,000.

Newport, Ky.—Board of Water Works Commissioners is considering laying of 1,400 ft. of pipe in Linder st.

Mansfield, La.—City is prepared to grant franchise for installation of system of water works.—W. E. Singleton, City Clerk.

Cambridge, Mass.—Board of Aldermen has passed order appropriating \$5,000 for comprehensive study by the Water Board in conjunction with the Mayor on future development of water supply of city.

Holyoke, Mass.—Surveys have been completed for proposed storage reservoir for former.—T. J. McCarthy, City Engineer.

Detroit, Mich.—Engineers Smith, Hinchman & Grylls, Washington Arcade, have recommended high pressure system of fire protection.

Vicksburg, Miss.—Council has adopted resolution authorizing purchase of Vicksburg water works plant.

Marionville, Mo.—Lawrence County Water, Light and Cold Storage Co. has been granted water works and electric light franchise.

Albany, N. Y.—Board of Contract and Supply has instructed Secretary Wachsmann to advertise for c.-i. pipe, taps, sleeves and valves for water works; lubricating oil bids will also be invited as well as road oil for Bureau of Parks.

Hornell, N. Y.—Bids will be asked at once for installation of proposed storage reservoir and improvement to water system.—Chas. C. Hopkins, Rome, Consulting Engineer.

New York, N. Y.—Board of Water Supply has directed its Chief Engineer to prepare forms of contract for completion of the pressure tunnel under Hudson River at Storm King, and advertisements for bids on work will be made as soon as possible.

Rochester, N. Y.—Board of Contract and Supply will at once ask for bids for furnishing Water Works Department with valve boxes and steel bands.—F. X. Pifer, Secretary.

Mandan, N. D.—Improvements in the water works, which will cost about \$65,000, are planned for early spring.

Benwood, O.—Benwood and McMeichen Consolidated Water Co. has been incorporated to supply town with water.—E. Gates and G. Gelwicks, Steelton, Pa.; W. D. Shaefer, F. W. Kendig and W. J. Happle, Mechanicsburg, Pa., incorporators.

Cambridge, O.—State Board of Health has ordered city to install purification plant for water system.

Chardon, O.—Plans for water works system have been submitted to Council; they provide for water from Aquila Lake or spring near Bass Lake.—B. F. Hewitt, Geneva, Engineer.

Cincinnati, O.—Director Sundmaker will ask Council for authority to enter into contract to supply the village of Silverton with water.

Lodi, O.—Village has voted \$21,600 bonds to install water system.

Cherokee, Okla.—City will receive bids about Feb. 25, through Engineers Burns & McDowell, Scarritt Bldg., Kansas City, Mo., for furnishing standard water pipe.

Muskogee, Okla.—Citizens will vote Feb. 16 on \$390,000 bonds for improvements to water system, new intake of not less than 48 inches in diameter, one 6,000,000-gal. low lift pump, one 6,000,000-gal. high service pump, one 6,000,000-gal. purification plant, 4,000,000-gal. reservoir on top of Agency hill, 11,700 ft. of 24-in. c.-i. mains and 9,500 ft. 16-in. c.-i. mains.—A. F. McGarr, Mayor.

Gresham, Ore.—Consulting Engineer Louis C. Kelsey, Selling Bldg., Portland, has recommended construction of gravity water works system at cost of \$22,913.—Lewis Shattuck, Mayor.

Juniata, Pa.—Citizens have voted \$10,000 loan to extend water system.

Caldwell, Tex.—Citizens will vote Feb. 21 on \$5,000 bonds for erection of steel stand-pipe or water tower.

Lubbock, Tex.—Plans have been prepared by Engineer E. L. Dalton, Dallas, for system of water works and sewerage; cost \$80,000.—F. E. Wheelock, Mayor.

Marlin, Tex.—Council has granted the water works franchise asked by J. E. Brown and W. D. Kyser.

Logan, Utah.—K. C. Schaub has estimated cost of improving water system at \$112,350 if cement is used and \$93,000 if conduits of wood are used.

Park City, Utah.—Plans and specifications have been prepared and bids will soon be asked for constructing water system.—J. W. Thompson, President of Council.

Bridgewater, Va.—Committee has been appointed to investigate probable cost and the ways and means of securing amount necessary to install first-class water system.

Richmond, Va.—Subcommittee of Water Committee of Council has recommended installation of two centrifugal electric pumps with capacity of 4,000,000 gals. for stand-pipe in Byrd Park; cost \$12,000.—Charles E. Bolling, City Engineer.

Wytheville, Va.—City is considering extension to water works.—G. S. Sexton, Mayor.

Spokane, Wash.—City Purchasing Agent John Gifford will ask for bids for furnishing Kalamein iron pipe.

CONTRACTS AWARDED

Long Beach, Cal.—Construction of reinforced concrete reservoir on Signal Hill, for Alamitas Water Co., to Edwin Ralphs, Long Beach, about \$12,000; capacity, 4,000,000 gals.

Atlanta, Ga.—Furnishing water pipe for year, to General Pipe and Foundry Co., city, about \$25,000.

Chicago, Ill.—Furnishing c.-i. water pipe, to U. S. Cast Iron Pipe Co., Rookery Bldg., \$23.75 per ton; total about \$80,000.

Holyoke, Mass.—Furn. 5 tons of pig lead for caulking to Chadwick Boston Lead Co., \$4.73½ per 100 lb. f. o. b. Holyoke.

Grand Rapids, Mich.—Furnishing the structural iron to be used in construction of filtration plant, to Grand Rapids Structural Co., \$1,785; other bidders were the Toledo Iron and Wire Works, \$2,380; Bush Manufacturing Co., \$1,990; Leitelt Iron Works, \$2,030, and M. Braudy & Son, \$3,000.

Fairbault, Minn.—Drilling artesian wells, to S. Severson Artesian Well Co., Minneapolis, \$5.95 per ft.

Two Harbors, Minn.—To Fairbanks-Morse Co., Chicago, Ill., for furnishing a pump of 3,000,000-gal. daily capacity for about \$10,000.

Rochester, N. Y.—Furnishing of 1,300 corporation cocks for Water Works Department, to the Henry Mueller Manufacturing Co., New York, \$757.70.

Portland, Ore.—To Dunham Carrigan & Hayden Co., San Francisco, Cal., for furnishing and delivering gate valves at \$12,332; contract includes the following: 20 4-in., 350 6-in. and 250 8-in. valves, 15 10-in. valves, one 32-in. valve, and one 52-in. valve, to operate horizontally with bevel gear and indicator.—D. D. Clark, Engineer Water Board.

Lonsdale, Tenn.—Citizens are urging \$29,000 bond issue; portion will be used to pay for having mains of Knoxville Water Co. extended to this city.

Ballinger, Tex.—Council has closed contract with American Water Softener Co., Philadelphia, for filtering plant for Ballinger Water-Works; plant will supply 750,000 gal. of water per day.

BIDS RECEIVED

Jacksonville, Fla.—Furnishing 12-in. centrifugal pump, Morris Machine Works, Baldwinville, N. Y., \$1,245; Worthington Pumping Engines, Atlanta, \$1,846.50; Buffalo Steam Pump Co., Buffalo, N. Y., \$1,100; Erie Pump and Engine Works, Erie, Pa., \$1,158; Allis-Chalmers Co., Atlanta, \$1,080; 14-in. pump, \$1,340; 15-in. pump, \$1,495.

Perth Amboy, N. J.—Engine and blower for water works at Runyon: American Blower Co., \$787; J. F. Canady, \$750; B. F. Sturtevant, \$790; B. Franklin Hart, 680; alternate bid, \$601; the Engineer Co., \$775; supplementary bid with additional equipment, \$1,254.50.

Georgetown, Tex.—Furnishing approximately 300 tons of class "B" c.-i. water pipe, (a) 4-in., (b) 6-in., (c) 8-in., (d) specials, price given per ton: American Cast Iron Pipe Co., (a) \$27, (b) and (c) \$25.45, (d) \$55; Dimmick Pipe Co., (a) (b) and (c) \$28; (d) \$58; R. D. Wood & Co., (a) (b) and (c) \$29; U. S. Cast Iron Pipe Co., (a) \$29, (b) and (c) \$26, (d) \$55; Blum Hardware Co., (a) (b) and (c) \$30.15, (d) \$56.15.—F. H. Lancashire, Dallas, Engineer.

Seattle, Wash.—Laying water mains in 25th ave., N. E. J. T. Donaldson, \$2,930.80; Rest Construction Co., \$2,659.40; Ferguson-Coit Co., \$3,039.84; Will Kopta, \$2,920.80.

LIGHTING AND POWER

Albertville, Ala.—City has postponed election to Feb. 20 on \$7,000 of bonds for construction of electric plant.

Ashdown, Ark.—City has decided to construct electric light plant.

Gilroy, Cal.—Coast Counties Power Co., Santa Cruz, has submitted plan to the Council to make several extensions to the lines of the municipal plant and operate it on percentage basis.—S. W. Coleman, Santa Cruz, Manager.

Fort Morgan, Col.—City will purchase a 250-h.p. boiler for municipal water and light plant.—George L. Cox, Superintendent.

Washington, D. C.—Plans have been pre-

pared for improving the street lighting system on several streets; cost about \$12,000.

Canton, Ga.—City is considering enlargement of municipal electric light plant during year.—J. W. Alford, Superintendent.

Moscow, Ida.—Mayor Byrns and Council have visited Co. fax to examine electric light system.

Coal City, Ill.—Economy Light and Power Co., Joliet, is considering the construction of a new power plant in Coal City.—J. R. Staley, Joliet, Superintendent.

Lincoln, Ill.—Council is considering installation of lighting plant.

Nashville, Ill.—Nashville Electric Light Co. is considering changing the entire system, adding 20 additional lights and installing steam turbine.—K. A. Steinhäuser, Manager.

Sandoval, Ill.—Village Board has voted to accept proposition offered them by Greenville, Ill., people for franchise.

Columbia City, Ind.—Council is about to install day current and bids for same will be received about March 13; work to begin July 1.

Logansport, Ind.—Central Station Engineering Co., 164 Dearborn st., Chicago, is preparing plans for enlarging lighting system and power plant.

Central City, Ia.—Council is considering granting franchise to Fred J. Cross to install electric light plant.

Newton, Ia.—Installation of municipal gas plant is being considered; cost \$40,000.—E. C. Finch, City Clerk.

Mulberry, Kan.—City is considering election on installation of electric light and water works plant; cost \$20,000.

Williamsburg, Kan.—City is negotiating to secure electricity from the municipal electric light plant in Ottawa.—W. O. Myers, Ottawa, Manager.

Lexington, Ky.—Lexington & Interurban Railway Co. will expend \$1,000,000 for various improvements, including erection of \$500,000 power plant.

Paintsville, Ky.—H. La Vier, Clarence W. Howes, H. M. Stafford and D. J. Wheeler are organizing company to install electric light system.

Richmond, Ky.—Richmond Electric and Power Co. has issued \$20,000 of bonds to provide for future extensions and improvements to system.—L. B. Herrington, President.

Vandalia, Mich.—Citizens have voted to grant Milling and Power Co., Cassopolis, a franchise to light city for 30 years.

International Falls, Minn.—Minnesota and Ontario Power Co., Minneapolis, is considering construction of dam to develop power at Kettle Falls.

Minneapolis, Minn.—Bids for maintaining electric street lamps and for lighting gas street lamps will be received by Council about Feb. 21, and contracts for at least one year will be entered into by city.

Burlington, Mo.—Citizens have voted \$8,500 electric light bonds.

Omaha, Neb.—Tentative plans for beautifying the city by special lighting districts have been drawn in the City Engineer's office and are practically ready to be presented to the Council for approval should proposed bill for revision of city charter pass Legislature.

Trenton, N. J.—Lamp Committee of Council is about to advertise for bids for electric street lights and for illumination of municipal buildings, as contract made five years ago with the Public Service Corp. will soon expire; bids will be asked for one, three and five years' contracts.

Union, N. J.—Lighting of township with electric lights is being considered.

Elmira, N. Y.—Elmira Water, Light and Railroad Co. has been authorized by Public Service Commission to issue \$243,995 of bonds for extensions of service and improvements to plant.

Ilion, N. Y.—Town Board of Herkimer has decided to ask for bids for franchise for furnishing North Ilion with electric light.

Niagara Falls, N. Y.—Mayor P. T. Keller has recommended decorative lighting of Falls, Third and North Main sts.

Arlington, O.—Boiler and water softener will be installed in the municipal lighting plant.—R. E. Dillon, Superintendent.

Sandusky, O.—Council has adopted resolution providing for an investigation of municipal ownership question with view to submitting it to vote of people at special election.

Cherokee, Okla.—City will receive bids about Feb. 25, through Engineers Burns & McDowell, Scarritt Bldg., Kansas City, Mo., for installation of direct-connected 75-kw., 2,300 60-cycle generator.

Heavener, Okla.—Degna-McConnell Coal Co., Wilburton, has applied for franchise to construct and operate electric light plant.

Ebensburg, Pa.—Installation of two new generators is being considered by the Ebensburg Light, Heat and Power Co.—E. F. Craver, General Manager.

New Berlinville, Pa.—Town will install electric street lights, getting current from Boyertown Co.

Ogden, Utah.—Davis County Telephone and Electric Light Co. has asked for franchise for electric light.

Waverly, Va.—Town Council has voted \$7,000 for installation of additional electric lights and street improvements.

Stoughton, Wis.—Council has decided to advertise for bids on bonds amounting to \$18,700 for purchase of additional water power for its municipal electric light and power system.

Penticton, B. C., Can.—Council is about to install municipal electric light and power plant.

CONTRACTS AWARDED

St. Louis, Mo.—By La Clede Gas Light Co. for gas holder, to Ritter-Conley Mfg. Co., Pittsburg, Pa., about \$40,000.

Winnipeg, Man., Can.—Furnishing two 500-kw. generators to Siemens Bros. Dynamo Works, Toronto, Ont., \$16,410.

BIDS RECEIVED

New Bedford, Mass.—Furnishing and installing a 50-kw. engine and generator, ready for operation, in municipal building; The Wilkinson Co., city, \$3,877; William P. Briggs, city, \$4,000; Eastern Electric Co., city, \$4,301; M. B. Foster Electric Co., Boston, \$4,376.

Albany, N. Y.—Board of Contract and Supply received only one bid for lighting the city's streets with electric lights, from Municipal Gas Co., which offered to light each arc light for 25c. per night if it is permitted to maintain overhead wires or 26c. per night if it must put the wires in conduits; furnishing incandescent lights, 5½c. per lamp per night.

FIRE EQUIPMENT

Marigold, Cal.—Volunteer fire department has been organized.—W. E. Plantz, Chief.

Willows, Cal.—City Trustees will sell bonds, recently voted, on March 1; fire apparatus will be purchased as soon as possible after sale.

New Britain, Conn.—Erection of fire station in southwestern part of city is being urged.

Tampa, Fla.—Bids will be asked for erection of fire station at Zack and Jefferson sts.

Girard, Ill.—Town will vote on \$3,000 bonds for purchase of fire engine.

Sandoval, Ill.—Village Board has decided to purchase fire engine; cost about \$1,800.

Indianapolis, Ind.—Fire Chief C. E. Coats has recommended erection of three engine houses, purchase of combination hose and chemical engine, also engine and equipment for Hose Co. No. 26.

New Castle, Ind.—Council has purchased building site in the Industrial addition for erection of fire house; company will be organized and equipment purchased this spring.

Waterloo, Ia.—City is considering purchase of auto car for Chief Ashley Dunham.

Baton Rouge, La.—Fire Department will ask new bids for furnishing hose.

Annapolis, Md.—Purchase of fire engine, auto or steam, is being considered. Address Mayor Strange.

Relay, Md.—Reay Volunteer Fire Co. will at once erect \$3,500 station on Arlington ave.—Henry J. Truley, Baltimore, Architect.

Cliffondale, Mass.—Purchase of auto combination chemical and hose wagon, cost \$5,500, is being considered.

Southbridge, Mass.—Fire Department is urging installation of fire alarm system and purchase of auto truck.

Escanaba, Mich.—Citizens have defeated proposition to issue \$15,000 bonds to erect and equip fire station in North Escanaba; funds of light plant may be used to erect house.

Benson, Neb.—Citizens will vote on \$5,000 bonds to purchase engine, hook and ladder truck and other appliances.

Florence, Neb.—City is considering \$5,000 bond issue for purchase of equipment for fire department.

Bordentown, N. J.—Fire Chief Chas. E. Burr has recommended purchase of 500 ft. of hose and \$2,000 modern hook and ladder truck.

Bradley Beach, N. J.—Architect C. W. Brazier, 1188 Broadway, New York City, has prepared plans for erection of \$5,000 fire house.—Jacob Doll, Borough Clerk.

Nutley, N. J.—Purchase of \$6,000 auto truck has been authorized.—Councilman A. R. Carr, Chairman Fire Committee.

Perth Amboy, N. J.—Board of Aldermen has authorized Fire Committee to secure estimates for third-class steam fire engine and for combination chemical and hose wagon.

Corning, N. Y.—Mayor F. E. Ellison has recommended purchase of combination chemical auto for fire department.

Houghtonsville, N. Y.—Council has decided to appoint committee to investigate purchase of hose.

Freeport, L. I., N. Y.—Village Board of Trustees has decided to hold special election on \$6,000 bonds for purchase of additional fire apparatus.

Troy, N. Y.—Installation of fire alarm system is being considered.

Watervliet, N. Y.—Fire Chief Sadlemire has recommended purchase of engine and combination hose and chemical engine.

Hamilton, O.—City is considering equipping of two engine houses.—A. W. Marge-dont, Director of Public Safety.

Martin's Ferry, O.—City Solicitor David James has decided that it would be necessary to advertise for bids for automobile truck for Fire Department in order to comply with law.

Klamath Falls, Ore.—Bids will be received Feb. 20 for \$8,000 fire apparatus bonds.

Chester, Pa.—Mayor D. M. Johnson has recommended installation of fire alarm system.

Chester, Pa.—Purchase of steamer for Good Will Fire Co. is being considered.

Darby, Pa.—Fire Company has been organized to be known as Fire Patrol No. 2.

Hatboro, Pa.—Independent Fire Co. will purchase auto fire engine.

Lebanon, Pa.—Union Fire Co. has decided to purchase steam fire engine.—G. E. Kleiser, President.

Sharon, Pa.—Fire Chief Fred Vanderholt has recommended erection of two fire stations and installation of fire alarm system.

Williamsport, Pa.—Council is considering purchase of auto combination fire wagon.

Olneyville, R. I.—Residents of Thornton are interested in plan to secure chemical engine.

Summerton, S. C.—Town has organized fire department.—W. M. Mood, Chief.

Colton, S. D.—Volunteer fire department has been organized.—C. S. Juve, Chief.

Corpus Christi, Tex.—Need of better fire fighting apparatus is being urged.

Fort Worth, Tex.—Site at Jones and 16th sts. has been selected for erection of fire hall and repair shops.

Madison, Wis.—Claude & Starck, Architects, Badger Block, have prepared plans for erection of \$10,000 engine house at N. Broom and W. Johnson sts.

CONTRACTS AWARDED

Indianapolis, Ind.—Furnishing wire and cable for Gamewell fire alarm telegraph system, aggregating about \$5,000; to Western Electric Co. for 20 miles of wire, and to National India Rubber Co., New York City, for 6,000 ft. of cable.

Mishawaka, Ind.—Council has decided to install the Signaphone police alarm system in this city; alarm is made by Signaphone Co., Milwaukee, Wis.

Woodbury, N. J.—Furnishing steam fire engine, to Ahrens-Fox Fire Engine Co., Cincinnati, O., manufacturers of Continental engine, \$5,150.

Lockport, N. Y.—Furnishing fire hose, to Eureka Fire Hose Co., Syracuse, 500 ft., \$1.10 per ft.; to Boston Belt Co., Buffalo, 250 ft., 65c.; to Empire Mfg. Co., Lockport, 250 ft. 80c.

New York, N. Y.—To the Webb Motor Fire Apparatus Co., St. Louis, Mo., for two 75-ft. self-propelling hook and ladder trucks, \$19,900, and two gasoline pumping engines, \$16,500.

BIDS RECEIVED

Birmingham, Ala.—Furnishing auto apparatus to cost between \$60,000 and \$70,000; American La France, \$82,500; Webb Motor Car Company, for 50-horsepower, \$4,050 each; for 70-horsepower, \$4,450 each; Knox Automobile Company, \$76,200; White Automobile Company, \$59,695.50; Joseph Boyd & Bro., \$3,950 each; Robinson Fire Apparatus Company, \$4,680 each; Speedwell Company, \$4,500 each; Seagraves Company, \$4,333.33 each.

Texarkana, Ark.—Webb cars, 90-h.p., with regulation fire department equipment, \$6,500; No. 2 60-h.p., \$5,500; Seagrave cars, 54-h.p., \$4,850; American-La France cars, 60-h.p., \$5,500; Kanawha cars, 50-h.p., \$4,412.50; Northern cars, 30-h.p., \$4,000; Knox cars, 56-h.p., \$5,600; Peters cars, 54-h.p., \$4,136.

Jacksonville, Fla.—Erecting engine house on the King's road, Florida Contracting Co., \$5,500; R. Lee Sevil, \$5,735; J. B. Marshall, \$5,933; N. L. Snelson, \$5,840; Seaton & Seaton, \$5,489.90; all bidders of city.

New Bedford, Mass.—Furnishing hose; only two were in accordance with specifications: American-La France Fire Engine Co., 93½c. per ft. and the New York Royal Co., 97½c. per ft.; Combination Ladder Co.,

Providence, which supplied the hose bought last year, returned specifications, stating that they would submit no bid under them, but submitting price of 61½c., the same price as last year, for hose of same quality; Boston Belting Co. submitted three samples of hose, one for 80c. per ft., another for 90c. per ft. and a third for 80c. per ft.; neither conformed to the specifications; C. C. C. Fire Hose and Rubber Co. submitted three samples, and prices of 89c., 79c., 54½c., per ft.; Voorhees Rubber Manufacturing Co. submitted seven bids down to 70c.

East Providence, R. I.—Furnishing fire truck; Knox, \$5,200; Kanawha, \$5,000; Combination Ladder Co., \$4,550 and \$4,450; American-La France, \$5,500; American Locomotive Works, \$4,675; Monahan Vehicle Co., \$4,000; Frayer Miller, \$4,500.

Seattle, Wash.—Construction of Fire Station No. 28 in Hillman City Addition: Rounds-Hurson Co., \$7,350; C. Kuppler, \$6,000; N. P. Olsen, \$5,485; A. C. Walter, \$7,980; Woock & Behrens, \$5,950; S. Schults, \$7,500; Finne & Gjarde, \$6,152.

Seattle, Wash.—Construction of fire station No. 26, South Park, E. B. Davis, 1012 Donovan st., \$950; Sundberg & Lindstrom, \$2,825; C. Kuppler, \$1,375; G. C. Lingenfelter, \$1,795; Woock & Behrens, \$1,850; construction of fire station No. 28, Hillman City, C. Kuppler, \$5,147; Woock & Behrens, \$4,844; N. P. Olsen, \$4,890; Finne & Gjarde, Northern Bank Bldg., \$4,783.

Seattle, Wash.—Furnishing two autos: I. D. Lundy & Co., Inc., one Stoddard-Dayton car, \$2,000; Metropolitan Motor Car Co., two Pullman cars, \$3,750; M. S. Brigham Motor Car Co., two Cadillac cars, \$3,810; Racine O. & A. Co., two cars, \$3,800; Osen & Hunter Auto Co., two Mitchell cars, \$4,000; Polson Implement Co., one American car, \$2,350; F. H. Bardshar, one Stevens-Duryea car, \$2,500, and one Marion car, \$1,750, or both cars for \$4,000; Winton Motor Car Co., two cars, \$4,000; J. T. Keena & Co., one Pullman car \$1,800, one Cadillac car \$1,000, one Packard car \$2,500, one Winton car \$1,500, one Packard car \$2,000, one Packard car \$2,000, one Packard car \$3,000, one Pope-Hartford car \$1,000.

Spokane, Wash.—Furnishing four-passenger roadster for Assistant Chief of the Fire Department: American Automobile Company, Stoddard-Dayton 43-horsepower car, \$2,500; Columbia Motor Car Company, of Hartford, Conn., by John M. Bell, local agent, Columbia car, 39-horsepower car, \$3,900; Pacific Car Company, Tacoma, 50-horsepower Kissel Kar, \$2,410; for automobile aerial truck: Seagrave Company, of Cincinnati, \$10,725; Webb Motor Fire Apparatus Company, St. Louis, \$10,200; for combination chemical engine and hose wagon: Seagrave Company, \$5,600; Knox Automobile Company, by John M. Bell, \$5,910 for solid tires, \$6,166 for pneumatic tires; Webb Motor Fire Apparatus Company, \$6,200; Pacific Coast Fire Supply Company, of San Francisco, \$6,250; Emerson Coupling and Fire Supply Company, Kansas City, Kan., \$5,700.

BRIDGES

Ansonia, Conn.—City is considering construction of bridge across Naugatuck River at Bridge st.—V. B. Clarke, City Engineer.

Jacksonville, Fla.—Board of Public Works has rejected all bids received for erection of bridge over East Bay st.

Watseka, Ill.—Board of Supervisors has decided to build bridge in Pigeon Grove Township.

Elkhart, Ind.—County Commissioners have agreed to spend \$5,500 for two bridges to take place of three bridges for extension of East Beardsley ave., for which \$27,000 was originally asked last summer.

Indianapolis, Ind.—Detailed estimate of cost of erecting and repairing bridges has been submitted to Board of Public Works by City Engineer Klausmann, as follows: State ave. and Pleasant Run, \$11,466; Highland ave. and Pogues Run, \$7,736; Roache ave. and the canal, \$8,486; 25th st. and the canal, \$8,486; East Michigan st. and Pogues Run, repairs, \$880, and Ohio st. and Pogues Run, repairs, \$350; total \$37,404.

Fort Scott, Kan.—County Commissioners are considering erection of bridge across Mill Creek.

Holyoke, Mass.—City Engineering Department will be called upon this year to furnish plans for new second level canal bridge in Cabot st. for retaining wall on Railroad st.—T. J. MacCarthy, City Engineer.

Meridian, Miss.—Meridian Street Railway Co. will construct concrete double track bridge over stream near 8th st.; cost about \$4,000.

Allentown, N. J.—County Commissioners have adopted resolution to repair and raise to standard of class A following county bridges: Furnace bridge, in Sixth Ward; Bogert's bridge, over the Little Lehigh River; Schleicher's bridge and Geiger's bridge, over the Jordan River.—Charles D. Weirbach, City Engineer.

Trenton, N. J.—County Engineer Eppele has about completed plans for proposed Stockton st. bridge.

New Brunswick, N. J.—Board of Freeholders will erect bridge over Woodbridge Creek.

Auburn, N. Y.—Erection of additional bridge over Owasco outlet is being considered by Council.

Erwin, N. Y.—Town has defeated proposition to expend \$7,000 for erection of bridge over Conhocton River near Coopers.

Charlotte, N. C.—Mecklenburg and Gaston County Commissioners are considering construction of bridge across Catawba River at Sloan's Ferry; cost about \$35,000.

Sandusky, O.—Bids are being received by the County Auditor for construction of six bridges in various parts of the county.

Youngstown, O.—Plans have been prepared for construction of bridge across reservoir of Commercial Water Co. in Coitsville Township.—Geo. Montgomery, County Surveyor.

Guthrie, Okla.—Citizens have voted \$45,000 viaduct bonds.

Muskogee, Okla.—Board of County Commissioners has instructed County Engineer Pitts to begin work of making surveys for proposed new bridge to be built across Arkansas River near Haskell; also to make new surveys, plans and specifications for all of the 33 bridges to be erected in various parts of the county.

Pendleton, Ore.—City is considering construction of bridge across the Umatilla at Main st.

Hanover, Pa.—County Commissioners have decided to erect concrete bridge across Furnace Creek, which separates Penn and Manheim Townships; work will be commenced about April 1.—Adam E. Kohr, City Engineer.

Knoxville, Tenn.—Plans have been prepared for erection of reinforced concrete bridge at Sixth Ave.—J. E. Thompson, City Engr.

Fredericksburg, Va.—Board of Supervisors of Spotsylvania County has decided to erect concrete or steel bridges over Hazen and Massapouox Run.

Richmond, Va.—Charles E. Bolling has asked Council Committee on Finance for appropriation of \$12,000 to repair free bridge across James River.

Walla Walla, Wash.—Plans have been completed by City Engineer E. B. Shipley for erection of reinforced concrete bridge across Mill Creek; cost \$11,000.

Fairmont, W. Va.—Marion County Court is considering erection of bridge near Paw Paw Creek at Rivesville.

Milwaukee, Wis.—Plans and specifications have been completed for construction of concrete bridge over the Kinnickinnic River at Chicago st.

CONTRACTS AWARDED

Selma, Ala.—Construction of 23 bridges in various parts of country to the Converse Bridge Co., Chattanooga, by Court of County Commissioners.

San José, Cal.—Building reinforced concrete bridge on Lincoln ave., to John McReynolds, \$3,979.

Michigan City, Ind.—Reconstructing Franklin st. bridge, to Thos. Phee Construction Co., \$14,800.

Kansas City, Mo.—By Board of Public Works, for construction of reinforced concrete bridge over the Blue River at 15th st., to William P. Carmichael Co., St. Louis, \$60,318; other bidders were: S. M. Kerns, Kansas City and Denver, \$66,510; Freeborn Engineering and Construction Co., \$66,893.70; Kansas City Bridge Co., \$81,926; Midland Bridge Co., \$91,114.50; A. M. Blodgett Construction Co., \$98,150.—Waddell & Harington, Leslie-Orear Bldg., Kansas City, Mo., Engineers.

Woodstown, N. J.—Erecting concrete and iron bridge over Salem Creek, to Owego Bridge Co., \$3,645.

Poteau, Okla.—By the County Commissioners of Le Flore County, for construction of the bridge in District No. 1, to Missouri Valley Bridge Co., \$9,670; to Kansas City Bridge Co., for bridges in Districts Nos. 2 and 3, \$8,176 and \$1,857, respectively.

Petersburg, Va.—Building Walnut Hill viaduct, to Roanoke Iron & Bridge Co., \$41,000.

Superior, Wis.—Building wooden trestle across Nemadji River at E. Fourth St. at present grade to Interstate Dredge & Dock Co.

BIDS RECEIVED

Washington, D. C.—Strengthening the Calvert st. bridge: Snare & Triest Co., 143 Liberty st., New York (proposition A) \$20,980, (B1) \$16,200, (B2) \$4,780; Penn Bridge Co., Beaver Falls, Pa., (A) \$19,789, (B1) \$16,280, (B2) \$3,409; Baltimore Bridge Co., Baltimore, Md., (A) \$23,250, (B1) \$19,280, (B2) \$3,870; Pierson & Goodrich, Inc., 30 West st., New York, (A) \$28,890, (B1) \$21,-

940, (B2) \$6,950; Oscar Daniels, 38 Park Row, New York, (A) \$22,514, (B1) \$18,000, (B2) \$4,900; McClintick-Marshall Construction Co., Pottstown, Pa., (A) \$23,400, (B1) \$17,875, (B2) \$6,450.

Peoria, Ill.—Building bridge: Toledo-Massillon Bridge Co., \$212,276; Midland Bridge Co., Kansas City, \$217,153; the Milwaukee Bridge Co., \$166,896.50; the Cullen Friestedt Co., Chicago, \$206,715.67; Joliet Bridge and Iron Co., \$248,000; Kansas City Bridge Co., \$233,000; the Pennsylvania Steel Co., Steelton, Pa., \$205,825.

Indianapolis, Ind.—Building bridge over Lick Creek in Warren Township: L. Darrah, \$2,000; Volpp & Fritz, \$1,697; American Construction Co., \$1,975; Charles Hoover, \$1,635; Hy Tielking, \$1,888; A. W. Moore Co., \$1,807; King & Heaton, \$1,879.

Kalamazoo, Mich.—Constructing concrete Gull st. bridge: Herman Tapp Construction Co., Fort Wayne, Ind., \$21,500 and \$21,000; Carpenter & Anderson, Grand Rapids, \$19,959; Richard Heystek, city, \$20,645; Huron Bridge and Iron Co., Port Huron, \$19,850, \$18,600 and \$16,900; La Fayette Engineering Co., La Fayette, Ind., \$18,500, \$18,050 and \$22,071; Henry L. Vanderhorst, city, arch bridge \$23,600, girder bridge \$21,000; C. Marsman, Grand Rapids, \$21,480 (\$100 less if iron rail is used); E. W. Seamans, Grand Rapids, \$24,444; Illinois Bridge Co., Chicago, Ill., 10 plans, ranging from \$17,888 to \$20,537; Wynkoop-McCormley Co., \$19,900 and \$18,990.

Southampton, L. I., N. Y.—Canton Bridge Co., Canton, O., only bidder for construction of the Quoque bridge, \$8,871.

Richmond, Va.—Plans and proposals for erecting reinforced concrete bridge over James River, to replace old Mayo's bridge: McLean Contracting Co., Baltimore, \$261,000, alternate bid with different plan of reinforcement, \$252,000; railway tracks, \$900; Southern Ferro Concrete Co., Atlanta, Ga., \$222,000; I. J. Smith & Co., Richmond, seven designs and proposals as follows: \$210,275, \$195,000, \$205,563, \$192,370, \$216,737, \$224,774 and \$211,048; H. M. Alport & Sons, Richmond, \$233,548.90; Thomas Phee Construction Co., Chicago, \$215,800; Charles B. Clark & Co., Baltimore, \$179,400; paving, \$20,650; tracks, \$10,800; Carolina Concrete Co., Greensboro, N. C., eight designs, \$244,300, \$238,900, \$224,500, \$220,600, \$212,700, \$205,300, \$193,600, \$187,000; time 240 working days; Snare & Triest Co., New York, \$225,000; Fruin & Conlon Contracting Co., St. Louis, \$213,750; McKay Engineering Co., Baltimore, \$216,477; deduct for creosote wood paving, \$900; for vit. brick paving, \$5,000; add for railway tracks, \$7,000; Piedmont Construction Co., Atlanta, \$224,000; tracks, \$9,750; Hennebique Construction Co., New York, \$168,000, \$222,000 and \$225,000; James Corse, Racine, Wis., \$222,470; Cumming Structural Concrete Co., \$221,000; Stamper Harland & Co., Richmond, \$227,712.

Superior, Wis.—Fill to be made at Nemadji River and wooden bridge at East 4th st., Whitney Bros., as Interstate Dredge and Dock Co., lowest bidders, \$41,840.37; Ed Gallagher, \$42,500; E. A. Dahl & Co., \$44,490; John Shea and Wm. Walsh, \$42,000; Barnett & Record, \$44,475; using a different kind of lumber than timber specified the Whitneys filed bid of \$46,603.07.

MISCELLANEOUS

Benton, Ark.—Saline County is considering erection of jail.—M. D. Kinkead, County Clerk.

Willows, Cal.—City Trustees have decided that on March 1 the bonds recently voted for municipal improvements will be sold; immediately after disposal work will be commenced on city hall, which is to cost about \$25,000.

Washington, Ga.—Architect G. Lloyd Preacher, Augusta, is preparing plans for erection of \$20,000 jail for Wilkes County.

Goshen, Ind.—Council has ordered purchase of site for erection of city hall.

Indianapolis, Ind.—Superintendent of Police Hyland has recommended purchase of \$5,000 auto patrol wagon.

Salina, Kan.—Contract will be let about Mar. 20 for erection of proposed city building. Address Mayor Kirtland.

Winchester, Ky.—City has sold \$40,000 city hall bonds.

Boyce, La.—City is considering erection of jail.

Baltimore, Md.—Mayor Mahool has recommended that city should spend at least \$50,000 a year for playgrounds and recreation places for children.

Fall River, Mass.—Board of Health has decided to ask for new bids for removal of garbage.

Nahant, Mass.—Town is considering erection of municipal building at Nahant road and Pleasant st.

Worcester, Mass.—Council has decided to purchase site on Waldo st. for erection of police headquarters.

Muskegon, Mich.—Erection of city hall is being urged.

St. Paul, Minn.—Police Board will advertise for bids for remodeling Benz building, to be used as temporary quarters for Central police station.

Loup City, Neb.—Election on bonds for erection of court house is being considered.

Manchester, N. H.—Council is considering erection of comfort station.

Bogota, N. J.—Council will transform school on Larch ave. into borough hall.

Elizabeth, N. J.—Preliminary plans are being prepared by Architect C. W. Oakley for proposed tuberculosis hospital in New Providence Township.

Hightstown, N. J.—Borough will erect \$7,000 town hall. Address Mayor Blauvelt.

Perth Amboy, N. J.—Mayor A. Bollschweller has recommended establishment of public playgrounds.

Trenton, N. J.—Sanitary Committee of Council will ascertain cost of installing comfort station at State and Broad sts.

Albany, N. Y.—Council is considering municipal system of ash and garbage collection and disposal.

Albany, N. Y.—Board of Contract and Supply will at once ask bids for removal of street dirt and dead animals.

Corning, N. Y.—Mayor F. A. Ellison has recommended purchase of combination ambulance and police patrol.

Dunkirk, N. Y.—Council has passed over the veto of Mayor James a resolution to buy Kimball dock site at expenditure of \$10,000.

Niagara Falls, N. Y.—Mayor P. J. Keller has recommended collection of garbage by contract and establishment of first-class city market.

Syracuse, N. Y.—City will soon let contract for sprinkling streets.—Geo. J. Metz, City Clerk.

Cherryville, N. C.—Wheeler & Stern, Charlotte, have prepared plans for erection of city hall.—A. H. Heiss, Mayor.

Brewster, O.—Village has rejected bids for erection of proposed jail; lowest prices on purchase of four cells from city of Massillon will be secured.

Cincinnati, O.—County Commissioners have selected Architect A. C. Kuball, Lincoln Court Inn, to prepare plans for erection of \$750,000 jail.

Lowellville, O.—Mayor Robert Erskin has recommended erection of municipal building and establishment of small hospital.

Port Clinton, O.—Citizens have voted \$25,000 bonds to erect city hall.

Ashley, Pa.—Town hall and police station has been destroyed by fire.

Chester, Pa.—Engineering Department of city has completed the plans and specifications for two of the proposed new wharves provided under terms of the loan bill which carried aggregate appropriation of \$55,000.

Pittsburg, Pa.—New and beautiful entrance to Schenley Park and construction of a Parkway blvd running across city along present roadbed of the Baltimore and Ohio Railroad are improvements advocated in two plans set forth by Frederick Law Olmsted, city planning expert, employed by Pittsburg Civic Commission.

Trumbauersville, Pa.—Citizens will vote Feb. 28 on \$4,000 bonds for town improvements.

Newport, R. I.—Need of police station is being considered.

Providence, R. I.—Council has adopted resolution to spend \$150,000 for purchase and improvement of playgrounds.

Jonesboro, Tenn.—Washington County is considering \$50,000 bond issue for erection of court house.

Dallas, Tex.—Proposed city hall will be erected at Commerce and Howard sts.; no plans prepared as yet.

Fort Worth, Tex.—City has decided to locate new east side police station at corner of Missouri ave. and Slater st.

Mount Pleasant, Tex.—Site at Depot st. and Kauffman ave. has been selected for erection of combined city hall and fire station.

Nacogdoches, Tex.—Another election on erection of \$125,000 court house and jail is being considered.

Paris, Tex.—Citizens will vote March 1 on \$50,000 bonds to erect comfort station.

Hampton, Va.—Council is considering erection of city hall and stables on Court st.

Norfolk, Va.—Board of Control has asked City Council for appropriation of \$3,500 to build waiting house at Forest Lawn Cemetery.

Norfolk, Va.—B. F. Mitchell, Archt., and City Engr. Brooke have prepared estimates upon public lavatories showing that to build one underground on Commercial Pl. would cost \$4,500 and another above ground at the city market, \$3,000.

Spokane, Wash.—Chief of Police Doust has recommended purchase of electric automobile for Police Department emergency machine authorized by Council.

Richland Center, Wis.—Plans have been accepted for erection of \$30,000 city hall.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
New York	Albany	Feb. 20, 3 p.m.	Furnishing road oil for Bureau of Parks.	Isidore Wachsman, Secy. Bd. C.&S.
Indiana	Elkhart	Feb. 20, 10 a.m.	Constructing 21,000 sq. yds. of street paving.	B. I. Bixler, City Clerk.
New Jersey	Irvington	Feb. 20, 8 p.m.	Constructing Telford pavement in two streets.	M. Stockton, Town Clerk.
New York	Long Island City	Feb. 20, 11 a.m.	Deliver to Bu. of H'ways, Boro. of Queens, broken stone and screenings of trap rock, 3,000 cu. yds. of sand and 240,000 gals. asph. road oil, & pave, cur and lay sidewalks in var. sts.	Lawrence Gresser, Boro. Pres.
Ohio	Bowling Green	Feb. 20	Grade, drain, curb, macad. and oil Wallace ave.	Wm. Manner, Dir. Pub. Serv.
Iowa	Ft. Madison	Feb. 20	Constr. roads.	N. J. Huebner, Twp. Clerk.
Michigan	Saginaw	Feb. 21, 2 p.m.	Furnishing crushed stone, gravel and Portland cement.	J. W. Ederer, County Rd. Comr.
Missouri	Columbia	Feb. 21	Approx. 11,750 sq. yd. brick pave.	J. S. Bicknell, City Clerk.
Missouri	St. Louis	Feb. 21	Impr. various streets with vit. brick.	Maxime Rober, Pres. B. P. I.
New Jersey	Atlantic City	Feb. 27	Pave Pennsylvania and Albany aves.	E. D. Rightmire, City Engr.
New York	Albany	Feb. 27	Construct various highways in Oneida County.	Chas. E. Treman, Supt. Pub. Wks.
North Carolina	New Bern	Feb. 28, 8 p.m.	Approx. 40,000 sq. yd. paving.	F. T. Patterson, City Clerk.
Ohio	Lorain	Mar. 7, noon	Constructing sidewalks, cross-walks and repairing.	L. B. Johnston, Clerk.
SEWERAGE				
Indiana	Elkhart	Feb. 20, 10 a.m.	Constructing 1 mile vitrified pipe sewers.	B. I. Bixler, City Clerk.
Minnesota	St. Paul	Feb. 20	Constructing St. Anthony Park North Sewer System, Cost \$130,000.	Board of Public Works.
Ohio	Columbus	Feb. 21	Constr. dry cut off sewer.	H. S. Houlton, Dir. Pub. Serv.
Colorado	Colorado Springs	Feb. 24	Constr. brick sewers, incl. 1,255 lin. ft. 48-in., 3,975 ft. 36, 30 and 27 in. and 15,408 ft. 24, 21, 18, 12 and 10 in. clay or concrete pipe.	City Clerk.
Ohio	Akron	Feb. 24, noon	Constructing sanitary sewer.	J. W. Gauthier, Dir. Pub. Serv.
Ohio	Oakley	Feb. 27	Constr. sewer in Taylor ave.	Oscar Kosche, Village Clerk.
Iowa	Corydon	Feb. 28, 3 p.m.	Constructing three miles of sewers and a disposal plant.	City Clerk.
Michigan	Niles	Mar. 1, 8 p.m.	Constructing main trunk sewer.	Herman Roebeck, City Clerk.
WATER SUPPLY				
Ohio	Nottingham	Feb. 17	Constr. water mains in various streets.	J. C. Steinicke, Village Clerk.
New York	Albany	Feb. 20, 3 p.m.	Furnishing cast iron water pipe, standard special castings, tapping sleeves and valves.	Isidore Wachsman, Secy. Bd. C.&S.
Iowa	Corydon	Feb. 28, 3 p.m.	Constructing 6 miles 4 to 8-in. water mains, 70,000 gal. steel tank on 100 ft. tower, pump-house, reservoir, valves, pumps, motors.	City Clerk.
Ontario, Can.	St. Catharines	Feb. 28	Furn. c. i. pipe and special cast. for 36-in. gate val. 4 to 36 in.	Chm. W. Wks. Com.
Montana	Harlowtown	March 2	Constr. reservoir, cap. 250,000 gals., and lay. 3,550 ft. of 8-in. and 400 ft. of 6-in. main, with hydrants, etc.	S. K. Campbell, Town Clerk.
British Col, Can.	Victoria	March 3	Furn. 250 4-in., 100 6-in. and 10 12-in. double gate valves, and 15 tons best blue pig lead.	Wm. H. Northcott, Purch. Agt.
New York	Ogdenburg	March 7	Constr. covered sand filters, pipe lines, steam and elec. pump machinery, etc.	Jas. M. Wells, Chm. Bd. W. Com.
Mississippi	Macomb City	March 7	Sinking artesian well.	J. D. Harrell, City Clerk.
Manitoba	Dauphin	Feb. 25, 8 p.m.	Constructing 2 reinforced concrete highway bridges.	J. W. Johnston, Town Clerk.
BRIDGES				
Saskatchewan	Calgary	Feb. 20	Furnishing 200 five light ornamental lamp-posts.	A. G. Graves, City Comr.
Pennsylvania	Marcus Hook	Feb. 20, 7:30 p.m.	Furnishing street lighting for three years.	Wm. O'Donnell, Chm. Lt. Com.
New York	Gloversville	Feb. 21, 5 p.m.	Lighting streets by elec. with not less than 132 arcs and 194 incandescents for five or ten years.	Morrell Vrooman, City Engr.
FIRE EQUIPMENT				
New York	Albany	Feb. 20, 3 p.m.	Furnishing set of rubber tires for steam fire engine.	Isidore Wachsman, Secy. Bd. C.&S.
Kentucky	Louisville	Feb. 23	Furn. 150 firemen's uniforms.	R. B. Green, City Buyer.
MISCELLANEOUS				
Pennsylvania	Chester	Feb. 20, 7:30 p.m.	Constructing pier and bulkhead.	Z. T. Bartleson, Chm. Pub. Prop. C.

STREET IMPROVEMENTS

Los Angeles, Cal.—Contracts for finishing the grading of Harbor boulevard and for paving it, together with short stretch of Plain ave., which will join boulevard with Gardena, will be let by Supervisors in four sections, if specifications prepared by Highway Commission are adopted.

Stockton, Cal.—Bids will be received by Board of County Supervisors, March 6, 10 a.m., for \$500,000 good road bonds.

Glen St. Mary, Fla.—Baker County has decided to build hard surfaced road.

Jacksonville, Fla.—Bids will be asked by County Engineer for bids for completion, with cement, of road on Lincoln ave., Highway ave. to Enterprise st.; also for completion of grading of Mandarin road.

Palm Beach, Fla.—Council has decided to authorize issue of \$55,000 of bonds for street, dock and sewer improvements.

St. Augustine, Fla.—Residents of Carrera st. are urging paving of the thoroughfare with brick.

Goshen, Ind.—Council has ordered paving of N. Main st.

Indianapolis, Ind.—Marion County Commissioners have appropriated \$108,804 for repair of gravel roads during year.

Kendallville, Ind.—Council has decided to pave North Main st.

Muncie, Ind.—Board of Works has decided to pave East Adams st. with brick.

Hampton, Ia.—City is considering paving three blocks of streets with brick and three blocks of alleys with concrete.

Hutchinson, Kan.—Bids have been rejected for brick paving in six blocks of alleys.

Mt. Sterling, Ky.—Council is considering paving of streets with brick.

Chatham, Mass.—Town has appropriated about \$11,000 to complete circuit of good roads.

Mattapoisett, Mass.—Town has appropriated \$1,500 to continue macadamizing of Acushnet road to Tinkham's Corner, a dis-

tance of nine-tenths of a mile; also \$1,000 to macadamize Hammond st. and repair sidewalk.

Grand Rapids, Mich.—Following estimates for grading and graveling have been submitted by City Engineer Cutcheon: Windsor ave., Fifth ave. to Alexander ave., \$8,370; Reynolds ave., Jefferson ave. to Madison ave., \$7,020; Oak Hill ave., East st. to Kalamazoo ave., \$6,630; Clancy st., Michigan ave. to Cedar st., \$15,940, and Cole st., from Marietta st. to Sweet st., \$3,710.

Kansas City, Mo.—City is considering paving portions of five streets.

Atlantic City, N. J.—Beach-front hotel men are urging paving of board walk with wooden blocks.

Wildwood, N. J.—Citizens have voted \$20,000 bonds to build 50-ft. board walk.

Rochester, N. Y.—Board of Contract and Supply will at once ask for bids for repairs to cement walks and asphalt during year.

—F. X. Pifer, Secretary.

Pittsboro, N. C.—Town will vote March 11 on \$5,000 bonds for street improvements.

Yadkinville, N. C.—Yadkin County is considering construction of macadam road from Yadkinville to East Bend, to the Forsyth county line.

Cleveland, O.—City is considering paving 95 city streets, covering in all about 15 miles, this year; larger paving jobs include stretches of Bolivar and Jennings roads and West 117th st.; total cost, about \$504,000.

Cincinnati, O.—City Engineer Shipley has completed new paving specifications, comprising specifications for wood block, granite, brick, asphalt and macadam, and will submit them to Service Director Sundmaker.

Memphis, Tenn.—City has decided to pave Bellevue Blvd., Autumn to Jackson ave., with tar macadam; cost, \$15,223.

Brownsville, Tex.—Citizens will vote March 14 on \$80,000 bonds to pave streets.

Dallas, Tex.—Bids will be asked for paving Jefferson st.; estimated cost, \$11,204.02.

Dallas, Tex.—Municipal Commissioners have instructed the City Secretary to advertise for bids for paving Jefferson st., Tenth to Tyler.

Paris, Tex.—Citizens will vote March 7 on \$50,000 bonds for paving square with creosoted blocks on concrete base, etc.—E. H. McCuiston, Mayor.

Waverly, Va.—Town Council has voted \$7,000 for street improvements and installation of additional electric lights.

Puyallup, Wash.—Council has decided to pave Walnut St.; cost, \$5,400.

Neenah, Wis.—Bids will be received by J. P. Keating, City Clerk, for laying 7,500 sq. yds. pavement; material to be tar macadam, concrete, sarsolite or creosote block; bids opened March 1, at 2 o'clock p.m.—John Le Tourneau, Engineer.

Platteville, Wis.—Council has passed resolution for paving with brick at cost of \$30,000.

CONTRACTS AWARDED

Richvale, Cal.—Building cement sidewalks to Helmer & Lawrence, 10¢ per sq. ft.

Augusta, Ga.—Laying cement sidewalks during year to A. A. Hett & Co.

Dallas, Tex.—Grading Beckley Ave. to B. C. Doty, 28.5¢ per cu. yd. and dirt; resurfacing South Lamar st. to Municipal Paving Co., 75¢ per sq. yd.

SEWERAGE

Dixon, Cal.—Sewer system will be installed in spring. W. J. Weyland and John M. McDermott, Town Trustees.

Orland, Cal.—Citizens will vote on \$27,000 bonds for sewer system.

Syracuse, N. Y.—Specifications have been prepared for construction of number of sewers; bids will soon be asked. John J. Halloran, Clerk, Board of Contract and Supply.

North Wales, Pa.—Council is considering plans for system of sewage.
Oakville, Ont. Can.—T. Aird W. Murray, Toronto, has prepared preliminary plans for sewer system. Chas. A. Bradbury, Town Clerk.

CONTRACT AWARDED

Richvale, Cal.—Building sewer system to C. D. Vincent Construction Co., \$9,364.

WATER SUPPLY

Orland, Cal.—Citizens will vote on \$23,000 bonds for water works.
Afton, Ia.—Election on installation of water works system is being considered.
Clara City, Minn.—Citizens will vote on installation of water works system.
Greenfield, Mo.—City is considering \$15,000 bond issue to install water works.
Fred. L. Shafer can be addressed.
Brady, Tex.—Citizens will vote Mar. 25 on \$40,000 bonds to secure ample water supply.
Brownsville, Tex.—Citizens will vote March 14 on \$35,000 bonds to extend water system.

CONTRACTS AWARDED

Richvale, Cal.—Building water system to Pacific Tank & Pipe Co., \$7,662.
Daytona, Fla.—Building rein. concrete water softening plant, city water works, to A. Van de Vord. D. D. and C. M. Rogers, City Engineers.
Seattle, Wash.—Laying water mains on Twenty-fifth ave. N. E. to Best Construction Co., \$2,659.40.
Fort William, Ont. Can.—To Canadian Iron Corporation for supplying pipe for summer; prices, \$37.50 a ton for ordinary pipe and \$60 a ton for special pipe; to The Kerr Engine Co. and Canadian Fairbanks Co. for the valves.
Point Grey, B. C., Can.—Supplying piping for the water works system to Robertson, Godson & Co.
Strathcona, Alta., Can.—Installing new 18-in. intake pipe, etc., to M. S. Caine \$4,200.

LIGHTING AND POWER

Auburn, Cal.—Placer County Board of Supervisors has approved plans of Pacific Gas & Electric Company for lighting of the Newcastle Lighting District.
San Bernardino, Cal.—City Council has ordered a call for bids on new street lighting contract for the coming year, starting March 1.
Afton, Ia.—Citizens will vote on installation of electric lighting plant.
Humeston, Ia.—Citizens are considering election on establishment of electric light plant.
Cortland, N. Y.—Mayor Lewis has vetoed resolution of Council, passed last August, granting to gas company new 25-year franchise.
Brownsville, Tex.—Citizens will vote March 14 on \$15,000 bonds to extend light system.
Miles, Tex.—Electric light plant owned and operated by S. M. and T. J. Farmer has been destroyed by fire.

CONTRACTS AWARDED

Cape May, N. J.—By County Board of Freeholders to Sea Isle City Electric Light Company three-year contract to illuminate the turnpike leading from Sea Isle City to mainland.

FIRE EQUIPMENT

Baltimore, Md.—Fire Chief Horan has recommended equipping of fire company at Forest Park with auto engine; also purchase of auto supply wagon.
Minneapolis, Minn.—Fire Chief Ringer has recommended purchase of chief's auto and auto fire engine.
Long Branch, N. J.—Budget for year includes \$4,550 appropriation for auto hose wagon for Independent Co. and \$4,550 for fire engine.
Union Hill, N. J.—Pioneer Hose Co. is urging erection of home.
Cincinnati, O.—Advisability of purchasing one or two auto horse trucks for rapid "first-water" service for use in suburbs is being considered by Director Small and Fire Chief Archibald.
Conshohocken, Pa.—Washington Fire Co. has decided to purchase auto fire engine.
Galveston, Tex.—Fire Chief Gemand has recommended purchase of extra fire size steam fire engine, small truck and practice tower, also erection of \$18,000 fire station.
Pecos, Tex.—Council has made \$500 appropriation for additional horse.
Milwaukee, Wis.—Council is considering resolution to have plans prepared for erection of fire house at Third and Hayes aves.

CONTRACTS AWARDED

Sherman, Tex.—Furnishing hose: 1,000 ft. to Eureka Hose Co.; 500 ft. to Voornees Hose Co.
Texarkana, Tex.—Furnishing auto fire wagon to Kanawha Fire Engine Co., 74 Cortlandt st., New York City, \$4,125.
Seattle, Wash.—Erecting fire station No. 28, Hillman City, to Kinne & Gjarde, \$4,783.

BRIDGES

Pasadena, Cal.—County and city have arranged to build bridge to cost \$250,000, and will span the Arroyo Seco at western edge of Pasadena.
Jacksonville, Fla.—Bids will be asked by County Commissioners for erection of concrete bridge over Deep Bottom Creek near Mandarin.
Perth Amboy, N. J.—Middlesex county Board of Freeholders is now making arrangements to have bridge erected over Woodbridge Creek, between Maurer and Sewaren.
Portland, Ore.—Plans for Woodward ave.-Meade st. bridge across the Willamette River in South Portland have been approved by Street Committee.
Menard, Tex.—Menard County has voted to build \$20,000 bridge across San Saba River.

MISCELLANEOUS

Markle, Ind.—Town has decided to erect town hall.
Topeka, Kan.—Bids will be asked for furnishing 12 steel dumping wagons. Address City Clerk Burge. Frank Snyder, Street Commissioner.
Annapolis, Md.—Annapolis Banking and Trust Co. has purchased \$4,000 improvement bonds.
New Bedford, Mass.—Plans have been prepared for erection of brick addition to workshop of city stables.—E. G. Bullard, Architect.
Grand Rapids, Mich.—Bids will be received Feb. 20, 4 p.m., for \$100,000 park and playground bonds.—Jas. Schurer, City Clerk.
Chatham, N. J.—Public Library Commission is considering erection of public library.
Manchester, N. Y.—Board of Aldermen is considering \$10,000 appropriation for erection of addition to city hall.
Warren, O.—Citizens have voted \$30,000 park bonds.
Muskogee, Okla.—Citizens will vote Feb. 16 on \$35,000 bonds to construct garbage disposal plant.
Brownsville, Tex.—Citizens will vote March 14 on \$12,000 bonds to repair city hall and market place and \$3,000 to repair city's slaughter house.
Columbus, Wis.—Claude & Starck, Architects, Badger Block, Madison, have prepared plans for erection of \$12,000 public library building.
Milwaukee, Wis.—Committee on Streets and Alleys has recommended purchase of four flushing machines at cost of \$1,000 each for trial purposes.

CONTRACTS AWARDED

Daytona, Fla.—Bldg. rein. concrete sea wall along Hillaboro River, to Hough & Bond, city, for 1st sect., 3,000 ft.; dredge fill, 75,000 cu. yds. back of wall still to be let, suction dredge work.—D. D. and C. M. Rogers, City Engineers.
Augusta, Ga.—Erecting brick stockade building to T. O. Brown & Son, \$12,670; plumbing and heating to E. J. Erbelding, \$2,645.
Boston, Mass.—Furnishing single and double teams and extra men: District No. 1, South Boston and Dorchester North, to J. H. Winsloe Contracting Co.; District No. 2, East Boston and Breed's Island, to John H. Carter; District No. 3, Charlestown, to B. E. Grant; District No. 4, Brighton, to Joseph McGreevey; District No. 5, West Roxbury, No. 6 and No. 9, Dorchester and Ashmont, No. 7, Roxbury South and Jamaica Plain, to J. H. Winsloe Contracting Co.; District No. 8, Roxbury, North and South End, to Edward A. Janse; District No. 10, North and West Ends and Back Bay, to B. E. Grant.
Buffalo, N. Y.—Rebuilding and enlarging city refuse utilization plant on Hamburg Canal strip; recommended for contracts: Masonry, Eastern Concrete Steel Co., \$18,519; iron work, C. F. Ernst's Sons, \$31,719; carpenter work, Christian Flierl, \$6,671; roofing, Martin Reiber, \$4,039; plumbing, Shaddock & Patton, \$2,744; total, \$63,692.
Lockport, N. Y.—Cleaning and sprinkling streets for one year, to Stainthorpe & Co., \$4,000.
Syracuse, N. Y.—Building comfort station, to John J. Sherlock, \$2,150.

NEW INCORPORATIONS

Union Sanitary Ash Co., Albany, N. Y.; collecting and disposing of ashes, etc., trucking business; capital, \$10,000. Incorporators: Chas. H. Minch, 126 Hudson ave.; Bernard L. Patterson, 21 Grand st.; Stephen C. Voelcker, 93 North Pearl st.—all of Albany, N. Y.
Humphrey Gas Pump Co., Syracuse, N. Y.; manufacture and sell internal combustion engines, air and gas compressors, etc.; capital, \$1,500,000. Incorporators: Edward N. Trump, Edward L. Pierce, Wm. B. Cogswell, Syracuse, N. Y.
Buffalo Receptacle Manufacturing Co., Buffalo, N. Y.; manufacture and deal in garbage and refuse receptacles, etc.; capital, \$150,000. Incorporators: Gustave Steinwachs, Mamie Steinwachs, Bertha Ambrose, all of Buffalo, N. Y.
Hancock-Howell Electrical Engineering Co., Buffalo, N. Y.; general contracting business; electrical and mechanical engineers; capital, \$5,000. Incorporators: Wheeler W. Hancock, Herbert H. Howell, Geo. C. Hillman, all of Buffalo, N. Y.
Cincinnati Wood Preserving Co., Cincinnati, O., has been incorporated with \$20,000 capital stock. The company owns a plant in the western part of the city, to which some extensive additions are planned for next summer. Its officers are: H. H. Beers, President; F. W. Cherrington, General Manager, and J. M. Stirnkorb, Secretary and Treasurer.
Illinois Shale Tile Co., Coal City, Ill., has been incorporated with a capital stock of \$75,000. The incorporators are: D. A. Haeger, John K. Newhall and John M. Raymond. The company will engage in the manufacture of brick, tile and other clay products. Construction will begin at once.

PROPOSALS

AUTO FIRE TRUCK

City of Bozeman, Gallatin County, Mont.
 Notice is hereby given that sealed proposals will be received by the undersigned up to 5 o'clock p. m., March 2, 1911, for one Auto Combination Chemical and Hose Wagon, according to following specifications:
 H. P.—80 to 90—A. L. A. M. Rating; speed 45 miles per hour; partition body; 1,200 feet 2½-in. hose; 40 gallon steel chemical tank and basket for 250 feet ¾-in. chemical hose; two short extension ladders; Bosch magnet; electric lights and revolving search light on dashboard; with or without dual tires; capacity eight men. Complete specifications to be furnished with each proposal.
 A. M. BRANDENBURG,
 City Clerk.

HELP WANTED

STATE OF NEW JERSEY.
 CIVIL SERVICE COMMISSION.

NEW JERSEY CIVIL SERVICE EXAMINATION FOR
 INSPECTOR OF GAS AND GAS METERS,
 PUBLIC UTILITY COMMISSIONERS
 FOR THE STATE OF NEW JERSEY.
 Salary, \$125 per Month.
 On MONDAY, March 13th, 1911.
 For particulars address Civil Service Commission, Trenton, New Jersey.
 (7-8)

ENGINEER—Wanted, position as engineer or assistant in municipal work, or management of water works. Can give first-class references. Will be open for engagement Feb. 15. 5-A, care Municipal Journal.

WANTED TO BUY
Transits With Arcs
 Send full description
THE ENGINEERING AGENCY, Inc.
 (Supply Dept.)
 Monadnock Block, Chicago
 Est. 1893 6tf